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ABSTRACT

This research report surveys the Japanese educational system, computer-aided instruction (CAI) in Japanese education, and the Japanese home computer industry. The Japanese educational system is found to be dominated by extensive preparation for entrance examinations, with resulting popularity in private tutoring services, preparatory schools, study aids, and exam preparation equipment. There is also a strong emphasis on English language skills in schools. Computer use in Japanese schools is minimal. The home computer market is dominated by relatively inexpensive, cassette-driven hardware. The report's first section is a survey of the contemporary Japanese education system, with chapters on the structure of the educational system, college entrance examinations and their effects on secondary education, alternatives to the examination system, the Ministry of Education, educational administration by local governments, school curricula, school textbooks, instructional aids equipment, educational expenses, private tutoring services and preparatory schools, and the Test of English as a Foreign Language. A section on CAI in Japanese education surveys microcomputers in educational facilities and discusses an experimental CAI project. A third section surveys both hardware and software aspects of the home computer industry. Numerous charts and tables are included in the text, and the appendices offer the following: (1) charts showing the structure of the school system and the organization of the Ministry of Education; (2) English curriculum guides for lower and upper secondary schools; and (3) an advertisement in Japanese for educational software. (DCS)

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# RESEARCH REPORT ON THE JAPANESE SCHOOL SYSTEM, COMPUTER-AIDED INSTRUCTION IN JAPAN AND THE JAPANESE HOME COMPUTER MARKET

Prepared by Mary Ellen Hoke

with the assistance of Hiroko Morimoto

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## Major Findings of Research on Computers and the Japanese School System

- There is a strong emphasis on English-language skills in schools. More than 10 million students study English in Japan (7th - 12th graders); some 19,000 take the Test of English as a Foreign Language (TOEFL) each year.

- The Japanese educational system is dominated by extensive preparaton for entrance examinations. A relatively stable population of 4.5 million students take entrance exams to Junior High (1,969,000), to Senior High (1,699,000) and to university (800,000) each year.

- Juku, or private tutoring services and preparatory schools, had an estimated enrollment in 1981 of nearly 3 million (6th grade through 12th grade). Juku costa vary greatly, but total expenditures for juku in 1976 were estimated to be approximately $860 million; an average per year per student expenditure of $300.

- The use of computers in Japanese schools is minimal; only 15.9 percent (or 2200 schools) of all elementary and secondary schools have any computers; in schools that have computers, only 43.1 percent of the computers (or 1,653 computers) in the entire country are used for computer-aided-instruction.

- The market for study aids and exam preparation equipment (preparation books, flash cards, sample tests, etc.) was estimated in 1974 to be $1 billion per year and growing.

- The Japanese home computer market is dominated by relatively inexpensive, cassette-driven hardware.

- The personal computer home/hobby market for 1983 was approximately 45 percent of the total PC market (or 427,500 units). By May, 1984, roughly 155,000 MSX machines had been shipped; that number is expected to reach 500,000 units by the end of 1984, and 1,000,000 units by the end of 1985.

- In the Japanese home computer market, the best selling software packages are time and information managers; educational and simple mathematical programs are the second most popular kinds of packages. Education-oriented software accounted for approximately 10% of the marketed software, or about $6 million in 1983.

Table of Contents


| | Page Number |
|---|---|
| I. Contemporary Japanese Educational System | 6 |
| A. The Educational Structure | 6 |
| B. College Entrance Examinations and their Effects on Secondary Education | 14 |
| C. Alternatives to the Examination System | 19 |
| D. National Educational Administrative Structure | 21 |
| E. Educational Administration by Local Governments | 29 |
| F. Curricula in School Education | 33 |
| G. School Textbooks | 39 |
| H. Instructional Aids Equipment | 41 |
| I. Educational Expenses | 44 |
| J. Juku | 47 |
| K. The Test of English as a Foreign Language | 52 |
| II. CAI and Japanese Education | 57 |
| A. Survey of Micro-Computers in Educational Facilities | 57 |
| B. Tsukuba University Experimental CAI Project | 66 |
| III. Japanese Home Computer Industry | 68 |
| A. Hardware Industry | 68 |
| B. Software Industry | 76 |
| Appendix A: Structure of the Japanese School System | 87 |
| Appendix B: Organization of the Ministry of Education | 88 |
| Appendix C: English Curriculum Guidelines for Lower Secondary Schools in Japan | 89 |
| Appendix D: English Curriculum Guidelines for Upper Secondary Schools in Japan | 100 |
| Appendix E: Sample Stratford C.C.C. Advertisement | 102 |

## Index to Charts


| | | Page Number |
|---|---|---|
| Chart I | Enrolled Elementary and Upper Secondary School Population | 9 |
| Chart II | Enrollment Rate by School Level | 10 |
| Chart III | Summary of Educational Statistics | 11 |
| Chart IV | Prescribed Subjects and Number of School Hours Per Year: Elementary Schools | 34 |
| Chart V | Prescribed Subjects and Number of School Hours Per Year: Lower Secondary Schools | 35 |
| Chart VI | Subject Areas, Subjects and Standard Number of Credits of Upper Secondary Schools | 36 |
| Chart VII | Major English Textbooks | 41 |
| Chart VIII | Percentage of Local Public Schools with Instructional Aids | 43 |
| Chart IX | Payment of Required Educational Expenses in Japan | 44 |
| Chart X | Parental Expenses for Public Elementary School | 46 |
| Chart XI | Price of Major Upper Secondary English Textbook Series | 46 |
| Chart XII | Fees of Selected Juku | 51 |
| Chart XIII | Degree of Computerization in Elementary and Lower Secondary Schools | 58 |
| Chart XIV | Degree of Computerization in Upper Secondary Schools | 59 |
| Chart XV | Number of Computers per Upper Secondary School with Computers | 61 |
| Chart XVI | Upper Secondary Schools with More Than 21 Computers | 62 |
| Chart XVII | How Microcomputers are Used in Schools | 63 |
| Chart XVIII | Industry Analysis of Personal Computers | 69 |

| | | Page Number |
|---|---|---|
| Chart IXX | Major Japanese Hardware Makers and Popular System Types | 71 |
| Chart XX | Best Selling Personal Computers in Japan | 74 |
| Chart XXI | A Survey of Educational Software on the Market in Japan | 80 |
| Chart XXII | Distribution of Personal Computer Software in Japan | 86 |

# I. Contemporary Japanese Educational System

## A. The Educational Structure

The present educational system in Japan is based on that of the U.S. and was set up after WWII by the U.S. occupation forces. The basic structure is a 6-3-3-4 ladder: elementary - lower secondary (or junior high) - upper secondary (or senior high) - university. (See Appendix A.)

At the lowest rung of the ladder is the kindergarten, which provides pre-school training for 3- to 5-year olds, accommodating more than half of this age group. The first 9 years of regular schooling are compulsory, comprising the 6-year elementary and 3-year lower secondary or junior high school. These are open to all and offer free schooling, except for the few private schools that are famous for preparing students for university. The upper secondary level or senior high is divided into three tracks that include the following schools: (1) general senior high schools, including full-time (3 years), part-time (4 years) and correspondence schools (4 years or more); (2) vocational senior high schools, also including full-time, part-time, and correspondence schools; and (3) the lower grades of the 5-year technical colleges, which operate at the grade 10 to 14 level. Since roughly 90 percent of all students attend upper secondary school, there is a growing demand that this level be included in the compulsory years (see Chart I). The upper secondary level has been articulated with the junior high, but entrance is still on the basis of stiff examinations. Though there are three types

of schools in the upper secondary level, most of the students entering college are graduates of full-time general high schools. To pass the entrance examination to a good college, one must pass the entrance examination to a good high school.

Higher education is available through the junior college or the university. The former provides either a 2- or 3-year program both of which are essentially terminal; and the latter, a 4-year undergraduate degree program and a variety of graduate programs. However, to be able to join a large, successful firm or government position where one can remain for life, it is necessary to attend a good university. Junior colleges are less competitive and most of the students are female.

Special schools for the physically or mentally handicapped provide public instruction at the elementary and secondary level parallel to the regular school ladder. They include schools for the blind, deaf, and otherwise handicapped. Miscellaneous schools include a wide variety of institutions on the outer fringes of the formal education system. They are, for the most part, privately operated and provide practical, vocational, and cultural instruction in such skills as dressmaking, cooking, typing, foreign languages (English, French, Spanish, etc.), bookkeeping, auto repair, computer operation, nursing, driving, flower arrangement, and tea ceremony.

The Japanese school year begins on April 1st and ends on March 31st of the following year, for all levels. Summer vacation (usually 30 to 40 days) is from late July through most of August for elementary and secondary level, and nearly two

months for university. Japan's public elementary, junior high, and senior high schools are in session 5 1/2 days per week (a half-day session on Saturday) for 35 weeks of the year. The minimum number of school days per year is 210, but most schools are open from 240 to 250 days. In comparison with the 180 days common in the United States, Japanese schools provide one or two more months in school each year.

Enrollment in Japanese schools is extremely high. For compulsory education (elementary and lower secondary, grades 1-9) it is 99.98 percent (as of 1980). Upper secondary level enrollment is nearly as high, at 92.9 percent. (See Charts I and II for details.)

Classroom instruction consists almost exclusively of lectures by the teacher, which are drawn directly from the textbooks. Most teachers design their lectures with only entrance examinations in mind. Instructional independence from exam preparation is rare and is not necessarily welcomed by the studnts, who want to pass the entrance exams. Debate and class discussion is not part of the regular instruction -- instruction almost entirely by lecture is a thoroughly entranched pattern.

Chart I

Enrolled Elementary and Upper Secondary School Population

| | 1980 | | 1981 | |
|---|---|---|---|---|
| Grade Level | Male | Female | Male | Female |
| **Elementary School** | | | | |
| 1st Grade | 1,052,840 | 1,002,829 | 1,018,393 | 968,917 |
| 2nd Grade | 1,050,199 | 1,000,057 | 1,052,212 | 1,002,537 |
| 3rd Grade | 1,030,576 | 979,684 | 1,049,917 | 999,836 |
| 4th Grade | 993,376 | 944,710 | 1,030,202 | 979,729 |
| 5th Grade | 967,652 | 918,602 | 992,891 | 994,458 |
| 6th Grade | 967,652 | 918,883 | 996,946 | 918,615 |
| TOTAL | 6,061,808 | 5,764,765 | 6,110,561 | 5,814,092 |
| (Male and Female) | 11,826,573 | | 11,924,653 | |
| **Lower Secondary School** | | | | |
| 7th Grade | 948,983 | 905,445 | 967,003 | 919,263 |
| 8th Grade | 799,055 | 760,394 | 948,613 | 905,089 |
| 9th Grade | 858,589 | 821,946 | 798,782 | 760,532 |
| TOTAL | 2,606,617 | 2,487,785 | 2,714,398 | 2,584,884 |
| (Male and Female) | 5,094,402 | | 5,299,282 | |

Source: Education in Japan, Ministry of Education, May, 1983.

Chart II

Enrollment Rate by School Level

(1980)

| Level | Normal Age of Admission | Total Population Enrolled | % of total Population Enrolled | Total Population |
|---|---|---|---|---|
| Pre-school (1-3 years) | 3-5 | 2,410,000 | 42.40 | 5,678,000 |
| Elementary (6 years) | 6-11 | 11,814,000 | 99.98 | 11,816,000 |
| Lower Secondary (3 years) | 12-14 | 5,095,000 | 99.98 | 5,096,000 |
| Upper Secondary (3 years) | 15-17 | 4,612,000 | 92.90 | 4,966,000 |
| Higher Education (2-4 years) | 18-21 | 2,125,000 | 33.30 | 6,348,000 |
| TOTAL | | 26,056,000 | 76.85 | 33,904,000 |

Note: 1) Figures for total population are estimates.
2) Students in special education schools and in special training, miscellaneous and correspondence schools are not included in the chart.
3) The diffusion of pre-school education is increasing; over 60 percent of the new entrants to elementary schools have attended kindergarten for at least one year.
4) The enrollment rate in compulsory education is almost 100 percent.
5) Post-compulsory secondary education is almost universal as shown by the 92.9 percent enrollment rate.
6) The higher education enrollment rate increased to 33.3 percent in 1980, although there is sex difference in the rate; 42.7 percent for males and 23.6 percent for females.

Source: Education in Japan, Ministry of Education, May, 1983.

Chart III

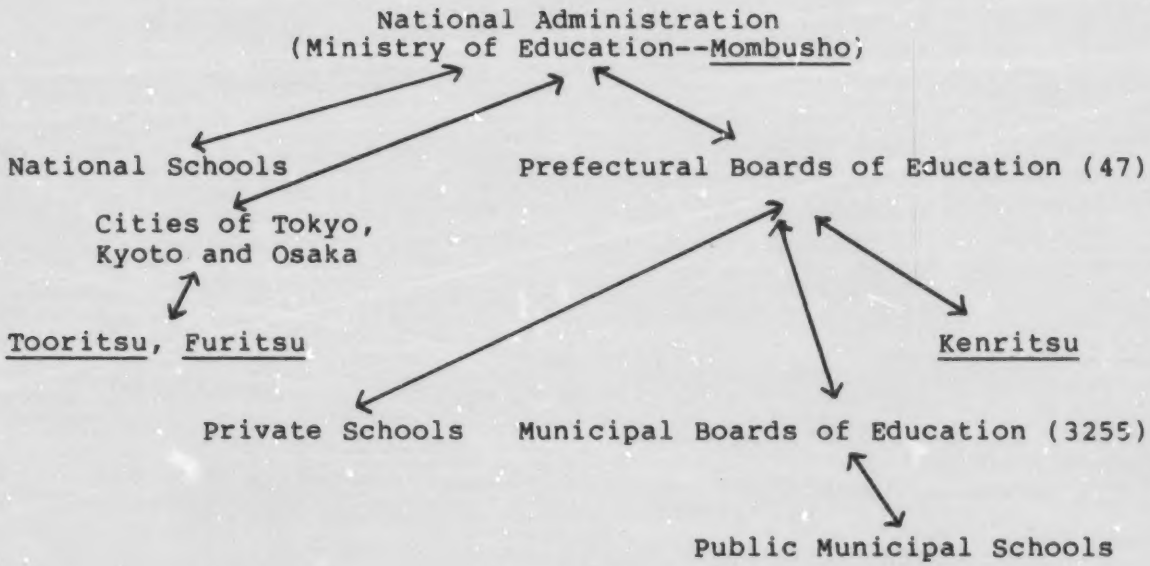
Summary of Educational Statistics

| Schools* | Institutions | Teachers | Students |
|---|---|---|---|
| Kindergartens | | | |
| % National | 0.3 | 0.3 | 0.3 |
| % Local | 40.8 | 27.5 | 26.0 |
| % Private | 58.9 | 72.3 | 73.3 |
| Total number | 15,059 | 100,229 | 2,292,811 |
| Elementary Schools | | | |
| % National | 0.3 | 0.4 | 0.4 |
| % Local | 99.0 | 99.1 | 99.1 |
| % Private | 0.7 | 0.6 | 0.5 |
| Total number | 25,004 | 473,965 | 11,924,653 |
| Lower Secondary | | | |
| % National | 0.7 | 0.6 | 0.7 |
| % Local | 94.2 | 96.6 | 96.5 |
| % Private | 5.1 | 2.8 | 2.9 |
| Total number | 10,810 | 258,487 | 5,299,282 |
| Upper Secondary | | | |
| % National | 0.3 | 0.2 | 0.2 |
| % Local | 75.9 | 77.5 | 71.7 |
| % Private | 23.8 | 22.3 | 28.1 |
| Total number | 5,219 | 247,718 | 4,682,827 |
| Special Education (Handicapped) | | | |
| % National | 5.1 | 3.4 | 3.8 |
| % Local | 92.9 | 95.9 | 95.2 |
| % Private | 1.9 | 0.7 | 0.9 |
| Total number | 877 | 35,182 | 94,069 |
| Technical Colleges | | | |
| % National | 87.1 | 85.7 | 84.6 |
| % Local | 6.5 | 9.2 | 8.7 |
| % Private | 6.5 | 5.0 | 6.7 |
| Total number | 62 | 3,722 | 46,468 |
| Junior Colleges | | | |
| % National | 6.7 | 5.5 | 4.1 |
| % Local | 9.9 | 10.9 | 5.2 |
| % Private | 83.4 | 83.6 | 90.7 |
| Total number | 523 | 16,696 | 372,406 |

| | | | |
|---|---|---|---|
| Universities | | | |
| % National | 20.6 | 46.4 | 22.8 |
| % Local | 7.5 | 5.6 | 2.9 |
| % Private | 71.8 | 48.0 | 74.3 |
| Total number | 451 | 105,117 | 1,822,117 |

| Schools* | Institutions | Teachers | Students |
|---|---|---|---|
| Special Training Schools (for post-compulsory education) | | | |
| % National | 7.0 | 3.6 | 3.5 |
| % Local | 5.8 | 6.5 | 4.6 |
| % Private | 87.2 | 89.8 | 91.9 |
| Total number | 2,745 | 21,867 | 472,808 |
| Miscellaneous Schools (Business English, YMCA, etc.) | | | |
| % National | 0.2 | 0.1 | 0.0 |
| % Local | 2.8 | 3.1 | 1.7 |
| % Private | 97.0 | 96.8 | 98.2 |
| Total number | 5,027 | 24,893 | 659,967 |

*National schools are publicly-funded, and run by the Ministry of Education. Local schools are those run by prefectural or municipal boards of education. (Prefectures are equivalent to U.S. states; there are 47 prefectures in Japan. Municipalities are self-governing bodies within prefectures; there are 3,255 municipalities in Japan.) Private schools are privately-funded and privately run, although they are supervised by the prefectural boards of education. In addition, there are some public schools -- called Tooritsu (in Tokyo) and Furitsu (in Kyoto and Osaka) -- that are run by the cities of Tokyo, Kyoto, and Osaka and that report directly to the Ministry of Education. There are also public schools run directly by the prefectures, called Kenritsu, that are not subject to the direction of municipal boards of education. The diagram below describes the chain of authority for schools in Japan.


National Administration
(Ministry of Education--Mombusho)
National Schools
Prefectural Boards of Education (47)
Cities of Tokyo,
Kyoto and Osaka
Tooritsu, Furitsu
Kenritsu
Private Schools
Municipal Boards of Education (3255)
Public Municipal Schools

B. College Entrance Examinations and their Effects on Secondary Education

The intense pressure of the Japanese college entrance examination is a unique social phenomenon. It is considered that no single event, with the possible exception of marriage, determines the course of a young person's life as much as entrance examinations, and nothing, including marriage, requires as many years of planning and hard work. Not only colleges, but high schools and many private junior high schools, elementary schools and even kindergartens use entrance examinations to select only a small portion of the applicants, and the competition is fierce. Japanese students study hard and sacrifice their pleasures for examination success. These arduous preparations constitute a kind of rite of passage whereby a young person proves that he or she has the qualities and ability to become a member of the society, and an institutional practice imposed of necessity upon adolescents. It is not only students who feel intense pressure but also their teachers and their parents, particularly mothers intensively involved for years in their children's preparation. Thus college entrance examinations, referred to as "examination hell", are considered the paramount problem of the Japanese educational system.

Approximately 800,000 applicants go through the college entrance examination procedure every year from late February to March. (In January, 1984, 341,000 students took the uniform first round examinations to public colleges. In addition, there were 281,701 applications for entrance exams to national and

municipal universities in 1984. This represents a decrease of 11,151 over 1983 applicants to national and municipal universities. The Japan Times Weekly) There is particularly intense competition among those applicants who seek admission to the national universities -- especially Tokyo University. Academically able applicants tend to concentrate upon these schools, which are not only less costly for students, but more prestigious than the private institutions. A Tokyo University degree is much more highly regarded in society than a degree from a new provincial university. And the better companies, which are the main goals of the university graduates, maintain either implicit or explicit quotas on the number of entrants to be taken from specific schools. The graduate of a good school has a better chance to secure not only a job, but also a job with high status.

The overall competition ratio for a hypothetical national average population is four to one (four applicants for each opening); this ratio is even worse for 4-year universities. The intense competition reflects the comparative rankings of the universities, in that the applicants compete more fiercely for admission to the universities with the highest prestige. In 1980, Tokyo University had a competition ratio of four to one, but among successful applicants 35 percent were taking the test for the second time and 10 percent were taking it for the third time or more. The competition is heightened even more because many applicants are roonin students (the term formerly denoted the lordless samurai) -- high school graduates who devote a year

or more at home or at private preparatory schools to prepare exclusively for the entrance examinations for particular colleges because of having failed to gain admission in the previous year. The existence of a large number of roonin students is peculiar to Japanese society and suggests that Japanese youth regard admission to particular colleges as especially crucial. The pressure for such post-high school preparation for the examination increases the psychological and financial stress on the students and their families. Suicides are not rare for students who fail examinations.

The college entrance examination carries the greatest weight in deciding admissions to colleges. It alone determines admission to the national and other publicly controlled colleges since other kinds of relevant information such as high school recommendations, and aptitude are little considered, although the submission of carefully prepared high school reports is required.

The college entrance examination has a powerful effect upon secondary and even elementary education. The struggle to be admitted to a prestigious university begins as early as elementary school, because one must attend a highly ranked junior high and high school in order to be competitive. The college entrance examination especially distorts the entire curriculum of the secondary schools. Since teachers and schools are judged on the success of their graduates in entering a prestigious university, there is great impetus for test teaching, i.e., providing the students practice in taking tests by giving them simulated tests every few weeks. They even teach the answers to

old examination questions and ignore the new approaches in mathematics, science, and English. For example, since the examination is written and not oral, a student studying English does not practice ordinary conversation, but concentrates on reading, translation from English to Japanese and fine points of grammar. High school teachers complain that they can not get students interested in laboratory work connected with science because the examinations measure only what can be read and answered. Since the examination is mostly multiple-choice questions, they cannot measure original and creative thought, placing emphasis on memorization.

It can be said that Japanese secondary education suffers from a dualism of purposes. The overt purpose of education stated in the Course of Study issued by the Ministry of Education (see Appendix B for excerpts) emphasizes each student's personal, social, and intellectual maturity. However, actual curricula and teaching are designed to respond to the requirements of the entrance examinations. Many schools, for example, adopt a system where text-based teaching in major subjects, such as mathematics and English, is shortened and completed by the end of the second year, or early in the third year, in order to devote the remaining time to examination drilling. Drill books, consisting of past examination questions, are often used in place of texts. In addition, most students, particularly seniors, are required to take a number of exercise tests, including several tests designed by particular schools expressly for the college entrance examination, a half dozen mock entrance examinations (moshi)

given by private corporations, and term and mid-term tests. Most of these tests, other than term tests, are taken only to improve the ability of the students to take examinations.

Exam questions are published commercially on an annual basis for over 350 universities. In addition to the questions and answers for the preceeding three years, these books outline in detail how the types of questions and the emphases have shifted recently and suggest appropriate study strategies for each university. There are so many of these commercially distributed study aids that 20 - 40 percent of the floor space of bookstores frequented by students is devoted to exam-oriented materials. Other study aids sold include vocabulary lists, catalogs of common mistakes, flash cards, and even deluxe student desks selling for over $500. The sale of spcial educational equipment is a regular feature of the Japanese department stores. It was estimated in 1974 that the sale of study aids and equipment had grown into a billion-dollar annual business.

This huge market for educational and study aids exists because over three quarters of a million students are applying to colleges or universities each year and several million more students are just a few years away from taking the exams. Almost all candidates are likely to buy at least a few study guides.

There has also been a national boom in practice tests (mogi shiken) and the related service of computerized counseling. Private testing companies have experienced rapid increases in the number of subscribers to their services. Nearly all high school seniors aiming at college now subscribe to this kind of service.

Test companies have sophisticated computer programs that analyze individual test results, indicate types of mistakes made, and point out areas requiring the most study. Because so many candidates are now taking the practice tests, these are the most reliable data banks against which to evaluate a student's chance of entering any particular university. A subscriber to one of these services receives, in addition to his/her test results, a statement of the probabilities of acceptance to any of the schools under consideration.

Numerous private tutoring services, tutoring schools that operate in parallel with the elementary, middle and high schools, and college preparatory schools (all generally called juku) exist today in order to respond to examination pressures. (See Section J on juku.)

C. Alternatives to the Examination System

The cause of examination worry is not only the finality of the results but the fact that examinations are impersonal and therefore unpredictable. Examination questions might be different from what one had anticipated, or one might not feel well, or one's nervousness might inhibit performance. Some families, unwilling to take this risk, try to find other paths to success. Genuine alternatives to examinations, however, are extremely few. One alternative is enrolling a child in a private "escalator" school through a reputable university with only nominal examinations. Some examples of "escalator" schools are Keio University, Nihon Joshi University, Aoyama University, and

Rikkyu University. But these private schools are so expensive that not many families can afford them. Another alternative exists in a few private universities that take small numbers of students on a recommendation basis from high schools with which they have close connections. The applicants are first selected according to their high school performance and records, and then required to take an examination and be interviewed by faculty members. However, these examinations are not as competitive as the conventional college entrance examinations that are taken by other applicants.

Other than these exceptions, there is no way of avoiding the college entrance examination.

In order to ameliorate distortions resulting from the college entrance examinations, the Association of National Universities and Colleges, an organization of the presidents of the national institutions of higher education, proposed an alternative approach in 1971. Its original proposal outlined a two-step entrance examination to be taken primarily by applicants for the national institutions. Based on its recommendations, which were endorsed by the Ministry of Education, the Association implemented the two-step entrance examination beginning in 1979.

Unlike the college entrance examination before 1979, the first examination (Joint First Stage Achievement Test) is prepared and administered by the College Entrance Examination Center, operated under the supervision of the Association, for all national universities and colleges as well as for other publicly controlled colleges interested in participating in the

uniform examination. The examination is conducted simultaneously throughout the country and covers all seven major subjects evaluating the general and basic achievement at the high school level. (In 1984, 341,000 students took the first round examinations in 1984.) The second examination, prepared by each institution includes scholastic examinations, examinations in practical skills, interviews, and short compositions. It is claimed that the two-step entrance examination provides applicants with opportunities to be tested twice instead of once, and to be evaluated comprehensively. According to the Association, these examinations will lead to a fair selection of applicants and normalization of high school education. The Association assumed that the results of those two examinations would be used by colleges to decide admissions. However, most universities use the results of the Joint First Stage Achievement Test to screen applicants eligible for the second examination, rather than to obtain data on the high school achievement level of applicants for the purpose of deciding admission. This approach has not decreased the burden upon high school students, since they must prepare for two types of examinations to gain admission to national universities.

D. National Educational Administrative Structure

The administrative agency responsible for the nation's educational administration is the Ministry of Education (Mombusho), and its chief executive is the Minister of Education.

The Ministry of Education is responsible for school education, social education, including the promotion and administration of science and culture, and is an administrative body to conduct and execute all such administrative affairs of the state concerning the above mentioned matters, and also those relating to religion.

The principal subdivisions within the Ministry are outlined in Appendix B. Their functions are as follows:

Minister's Secretariat

(Organization)

The Minister's Secretariat consists of the Personnel Division, the General Affairs Division, the Budgeting and Accounting Division, the Planning Division, the Research and Statistics Division, the Information Management Division, and the Press and Information Office.

(Functions)

The Minister's Secretariat is responsible for personnel affairs, welfare, general affairs and maintenance of liaison on behalf of the Minister; preparing draft legislation; preparing budgets; accounting and auditing; disseminating information; planning and evaluating policies of the Ministry; conducting nation-wide surveys on important aspects of education; conducting studies of education abroad; and compiling nation-wide statistics on education and annual reports.

Elementary and Secondary Education Bureau

(Organization)

The Elementary and Secondary Education Bureau consists of

the Financial Affairs Division, the Local Affairs Division, the Kindergarten Education Division, the Elementary School Education Division, the Lower Secondary School Education Division, the Upper Secondary School Education Division, the Vocational Education Division, the Special Education Division, the Textbook Authorization Division, and the Textbook Administration Division.

(Functions)

The Elementary and Secondary Education Bureau is responsible for the following: (i) planning concerning the system of local educational administration, and guidance, advice and recommendation concerning the general operation of local educational administration; (ii) sanction to the appointment of the superintendents of the boards of education of prefectures and major designated cities; (iii) planning concerning the systems of all appointment, dismissal, salaries, etc. of educational personnel in local public services, and guidance, advice and recommendations concerning the operation of the system; (iv) planning, assistance and advice concerning the promotion of elementary education, secondary education and special education (hereinafter referred to as "elementary and secondary education"), promotion of vocational education in schools; (v) assistance and advice concerning the correspondence education conducted by upper secondary schools; (vi) assistance and advice concerning vocational guidance in elementary and secondary education; (vii) professional and technical guidance and advice concerning school administration, curricula, teaching methods, pupil guidance, etc. in elementary and secondary education

through the preparation of handbooks, guidebooks and other professional publications and through sponsoring workshops, short-courses and other types of programs; (viii) authorization of textbooks; (ix) free distribution of textbooks to be used in schools for compulsory education.

Higher Education Bureau

(Organization)

The Higher Education Bureau consists of the Higher Education Planning Division, the University Education Division, the Technical Education Division, the Teacher Training Division, the Medical Education Division, and the Student Affairs Division.

(Functions)

The Higher Education Bureau is responsible for the following: (i) approval of the establishment and closing of universities and technical colleges; (ii) matters concerning national universities, national technical colleges and others; (iii) planning, assistance and advice concerning the promotion of higher education; (iv) establishment of basic standards for higher education; (v) assistance and advice concerning the correspondence education conducted by universities; (vi) planning, assistance and advice concerning the certification and training of educational personnel of elementary and secondary education; (vii) matters concerning scholarships and encouragement of students in study, and welfare and guidance of students.

Science and International Affairs Bureau

(Organization)

The Science and International Affairs Bureau consists of the Science Division, the Research Institutes Division, the Research Aid Division, the Science Information and University Library Division, the Planning and Coordination Division, the Educational and Cultural Exchange Division, the International Science Division, and the Student Exchange Division.

(Function)

The Science and International Affairs Bureau is responsible for the following: (i) matters concerning the liaison with scientific organizations; (ii) matters concerning the granting of national subsidies for the promotion of science; (iii) collecting and providing information, data and materials on science; (iv) professional and technical guidance and advice on all phases of science, through preparing and providing professional publication and through sponsoring workshops and other types of group programs; (v) maintaining contact and coordination concerning international activities relating to education, science and culture; (vi) matters concerning receiving foreign students and sending Japanese students abroad; (vii) working out drafts of laws and orders and approval of the establishment of juridical persons with regard to the domestic Unesco activities.

Social Education Bureau

(Organization)

The Social Education Bureau consists of the Social Education Division, the Youth Education Division, the Women's Education Division and the Audio-Visual Education Division.

(Function)

The Social Education Bureau is responsible for the following: (i) planning, assistance and advice concerning the promotion of social education; (ii) assistance and advice concerning correspondence education as a means of social education; (iii) matters concerning national social facilities such as the National Youth Houses; (iv) professional and technical guidance and advice to social education groups, social education leaders and to the other related persons through sponsoring workshops, short-courses, exhibitions and other types of group programs; (v) contact and coordination concerning audio-visual instruction.

Physical Education Bureau

(Organization)

The Physical Education Bureau consists of the Physical Education Division, the Sports Division, the School Health Division and the School Lunch Division.

(Functions)

The Physical Education Bureau is responsible for the following: (i) promotion of physical education and athletic sports; (ii) improvement of school health and school safety; (iii) dissemination and repletion of school lunch program; (iv) matters concerning the system of mutual aid benefits against accidents occurring under the supervision of schools; (v) establishment of basic standards for physical education and athletic sports, school health, school lunch, school safety, etc., contact and assistance concerning sports activities to be

held on an international or nationwide scale; (vi) professional and technical guidance and advice to physical education leaders, educational personnel and other related persons through preparing and making available such publications as handbooks and guidebooks, and through sponsoring workshops, short-courses, exhibitions and other types of group programs.

Administration Bureau

(Organization)

The Administration Bureau consists of the Private School Planning Division, the Private School Promotion Division, the Educational Personnel Welfare Division, the Planning Division, the Facility Planning Division, the Construction Subsidy Division, the Contract Management Division and the Construction Management Division.

(Functions)

The Administration Bureau is responsible for the following: (i) approval and authorization of school juridical persons whose competent authority is the Minister of Education; (ii) planning concerning the systems of administration with regard to private schools, and guidance, advice and recommendation concerning such systems of administration and their operation in general; (iii) investigation, guidance and assistance concerning the management of school juridical persons whose competent authority is the Minister of Education; (iv) aids to school juridical persons and others; (v) matters concerning the Public School Mutual Aid Association and the Private School Mutual Aid Association; (vi) assistance and advice concerning health and welfare of personnel

relating to education who are in local public service; (vii) establishment of basic standards for school facilities; (viii) contact and coordination concerning the improvement of the school environment; (ix) guidance and advice concerning the improvement of public and private educational facilities; (x) granting of national subsidies for the improvement of public educational facilities; (xi) the improvement of educational facilities of national schools and others.

Agency for Cultural Affairs

The Agency for Cultural Affairs (Bunka-cho) is an "external organ" of the Ministry of Education. It seems to be fairly autonomous, and yet is directly responsible to the Minister of Education. It is the Bunka-cho that is responsible for copyright law, including the proposed copyright of computer software.

(Organization)

The Agency for Cultural Affairs consists of the Director-General's Secretariat, Cultural Affairs Department and Cultural Properties Protection Department. The Director-General's Secretariat consists of the General Affairs Division and the Budgeting and Accounting Division. The Cultural Affairs Department consists of the Culture Diffusion Division, Arts Promotion Division, Japanese Language Division, Copyright Division, and Religious Affairs Division. The Cultural Properties Protection Department consists of the Cultural Properties Administration Division, Monuments and Sites Division, Fine Arts Division, Architecture Division, and Intangible Cultural Properties and Folk Culture Division.

(Functions)

The Agency for Cultural Affairs is responsible for the following: (i) planning assistance and advice concerning the promotion of culture and the preservation and utilization of cultural properties; (ii) improvement and diffusion of the Japanese language; (iii) matters concerning copyright; (iv) affairs concerning the facilities of art, culture, and cultural properties; (v) granting of national subsidies for the promotion and dissemination of culture, and for the preservation and utilization of cultural properties; (vi) sponsoring of, or participation in exhibitions and short-courses concerning culture and cultural properties; (vii) liaison with organizations relating to culture; (viii) investigation, designation, custody, repair and restoration of cultural properties; (ix) utilization of cultural properties including their opening to the public; (x) collecting, preparing and making available data and material concerning cultural properties; (xi) collecting information, data and materials on religion, and liaison with religious organizations; (xii) matters concerning religious juridical persons.

E. Educational Administration by Local Governments

National, prefectural and municipal (for definitions of these, see note with Chart III) educational agencies are largely independent of each other. The Minister of Education offers guidance, advice and assistance to prefectural boards of education; prefectural boards of education carry out similar functions in relation to municipal boards of education.

Prefectural boards of education administer schools (mainly upper secondary schools and schools for the blind, deaf and otherwise handicapped) and cultural and social educational institutions (public libraries, museums, etc.) established by prefectures. Municipal boards of education administer schools (mainly elementary and lower secondary schools) and cultural and social educational institutions established by municipalities.

Prefectural and municipal boards of education perform as a rule, such functions as follows:

1) Establishing, maintaining and abolishing schools;
2) Creating and revising curricula (in accordance with courses of study prescribed by the Ministry);
3) Adopting textbooks to be used in schools (see Section G on School Textbooks for details);
4) Appointing and dismissing teachers;
5) Purchasing instructional materials (non-book); and
6) Conducting teacher in-service training.

In addition, the prefectural boards of education perform such functions as follows:

1) Offering administrative and professional advice to the municipal boards;
2) Requiring the municipal boards to submit reports as occasions demand, and in some cases to make necessary improvements or corrections concerning their activities;
3) Appointing and dismissing, upon recommendation by municipal boards of education, teachers of elementary schools, lower secondary schools, compulsory level

special education schools, and part-time upper secondary schools established by municipalities, whose salaries are paid by the prefectural boards of education;

4) Certifying teachers for public and private schools; and

5) Supervising the establishment and revision of attendance districts for public upper secondary schools.

Private schools are not under the jurisdiction of the municipal authorities but are supervised by the prefectural governors. Prefectural and municipal boards of education usually appoint advisory committees for the development of citizen's public halls, libraries and museums.

F. Curricula in School Education

(1.) Curricula Preparation

Each school is responsible for preparing its own curriculum, in accordance with the Course of Study prescribed by the National Government (see excerpts in Appendices C and D), and local standards defined by each prefectural board of education.

The mechanism of curriculum preparation is as follows:

1) National level

a. The Education Minister prepares and promulgates the Course of Study as a national curriculum standard.

b. In preparing and amending the Course of Study, the Education Minister makes inquiries of the Curriculum Council (part of the national administration, composed of teachers, researchers, and other persons with educational experience) relating to the fundamental

policy of revision, and seeks the cooperation of concerned agencies, and others, such as the boards of education, schools designated for experimental study, etc.

2) Local Level

a. Prefectural boards of education define local standards.

b. Municipal boards of education define basic content.

3) School Level

a. Each school prepares its curriculum in consideration of regional conditions and pupils' characteristics within the framework of the national and local standards.

(2.) Prescribed Curricula

Curriculum standards for elementary, lower, and upper secondary schools are stated in the Course of Study issued by the Ministry of Education. The Course of Study provides the basic framework for curricula: the aim of each subject and the aims and contents of teaching in each grade.

Since World War II, curricula standards have been amended several times through changes in the Course of Study. In 1977, the Ministry of Education issued a revised version of the Course of Study for elementary schools and junior high schools. This was the first revision in nine years for elementary schools and the first in eight years for junior high schools. In August 1978, the Course of Study for Upper Secondary Schools was also revised. Known as yutori no kyooiku, the revisions were put into

effect in April 1980, April 1981, and April 1982, for elementary, junior high, and senior schools, respectively. The characteristic feature of the new revisions was to reduce teaching hours while trying to promote and maintain the consistency of school education through the whole course of study from elementary through senior high schools.

The prescribed subjects and number of school hours per year in elementary and lower secondary compulsory education schools are presented in Charts IV and V below.

Chart IV

Prescribed Subjects and Number of School Hours Per Year

Elementary Schools

| Subject | Grade Level | | | | | |
|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI |
| Japanese Language | 272 | 280 | 280 | 260 | 210 | 210 |
| Social Studies | 68 | 70 | 105 | 105 | 105 | 105 |
| Arithmetic | 136 | 175 | 175 | 175 | 175 | 175 |
| Science | 68 | 70 | 105 | 105 | 105 | 105 |
| Music | 68 | 70 | 70 | 70 | 70 | 70 |
| Art and Handicrafts | 68 | 70 | 70 | 70 | 70 | 70 |
| Homemaking | --- | --- | --- | --- | 70 | 70 |
| Physical Education | 102 | 105 | 105 | 105 | 105 | 105 |
| Moral Education | 34 | 35 | 35 | 35 | 35 | 35 |
| Special Activities | 34 | 35 | 35 | 70 | 70 | 70 |
| TOTAL | 850 | 910 | 980 | 1015 | 1015 | 1015 |

Notes: 1. One unit school hour is a class period of 45 minutes.
2. Private elementary schools can substitute religious education for a part of the school hours required for moral education.
3. The standard number of school hours allotted to special activities are for class assemblies, club activities and classroom guidance, and those for other special activities may be fixed by each school.
4. No foreign language is required. If it is offered, it would come under the category of Special Activities.

Source: Education in Japan, Ministry of Education, May, 1983.

Chart V

Prescribed Subjects and Number of School Hours Per Year of Lower Secondary Schools

| Subject | Grade Level 7 | 8 | 9 |
|---|---|---|---|
| Japanese Language* | 175 | 140 | 140 |
| Social Studies* | 140 | 140 | 105 |
| Mathematics* | 105 | 140 | 140 |
| Science* | 105 | 105 | 140 |
| Music* | 70 | 70 | 35 |
| Fine Arts* | 70 | 70 | 35 |
| Health and Physical Education* | 105 | 105 | 105 |
| Industrial Arts or Homemaking* | 70 | 70 | 105 |
| Moral Education | 35 | 35 | 35 |
| Special Activities | 70 | 70 | 70 |
| Elective Subjects | 105 | 105 | 140 |
| TOTAL | 1050 | 1050 | 1050 |

Note: 1) "*" indicates required subjects.
2) One unit school hour is a class period of 50 minutes.
3) School hours for the "Elective Subjects" may be allotted to one or more elective subjects and to Special Activities as well.
4) As for the school hours of Elective Subjects, the standard number of school hours allotted to Music, Fine Arts, Health & Physical Education and Industrial Arts or Homemaking in 9th grade is 35 hours, respectively, and in each grade 105 hours to Foreign Language and 35 to other necessary subjects may be allotted as the standard number of school hours.

Source: Education in Japan, Ministry of Education, May, 1983.

A minimum of 80 credits is required for graduation from upper secondary school. Some subjects are required and some are elective. The subject areas, subjects and the standard number of credits to be provided in upper secondary schools, according to the revised Course of Study, are shown in the following chart:

Chart VI

Subject Areas, Subjects and Standard Number of Credits of Upper Secondary Schools

| Subject Area | Subject | Standard Number of Credits | |
|---|---|---|---|
| Japanese Language | Japanese Language I | 4 | |
| | Japanese Language II | 4 | |
| | Japanese Expression | 2 | |
| | Modern Japanese | 3 | |
| | Classical Japanese | 4 | |
| | | | 17 |
| Social Studies | Modern Society | 4 | |
| | Japanese History | 4 | |
| | World History | 4 | |
| | Geography | 4 | |
| | Ethics | 2 | |
| | Political Science & Economics | 2 | |
| | | | 20 |
| Mathematics | Mathematics I | 4 | |
| | Mathematics II | 3 | |
| | Algebra & Geometry | 3 | |
| | Basic Analysis | 3 | |
| | Differentiation & Integration | 3 | |
| | Probability & Statistics | 3 | |
| | | | 19 |
| Science | Science I | 4 | |
| | Science II | 2 | |
| | Physics | 4 | |
| | Chemistry | 4 | |
| | Biology | 4 | |
| | Earth Science (Geology) | 4 | |
| | | | 22 |

| Subject Area | Subject | Standard Number of Credits | |
|---|---|---|---|
| Health & Physical Education | Physical Education | 7-9 | |
| | Health | 2 | |
| | | | 9-11 |
| Arts | Music I | 2 | |
| | Music II | 2 | |
| | Music III | 2 | |
| | Fine Arts I | 2 | |
| | Fine Arts II | 2 | |
| | Fine Arts III | 2 | |
| | Handicrafts I | 2 | |
| | Handicrafts II | 2 | |
| | Handicrafts III | 2 | |
| | Calligraphy I | 2 | |
| | Calligraphy II | 2 | |
| | Calligraphy III | 2 | |
| | | | 24 |
| Foreign Language | English I | 4 | |
| | English II | 5 | |
| | English II-A | 3 | |
| | English II-B | 3 | |
| | English II-C | 3 | |
| | | | 18 |
| TOTAL STANDARD NUMBER OF CREDITS | | | 129-131 |

Notes: 1) Thirty-five units of school hours, each of which represent 50 minutes teaching time, yield one credit.
2) Credit allocation to other subjects is prescribed by each establishing body of relevant upper secondary schools.
3) See Appendix D for a detailed explanation of the above English courses.

Source: Education in Japan, Ministry of Education, May, 1983.

(3.) Testing

Tests are usually not provided with the texts, but are written by teachers. The tests are intended to measure how well students have acquired vocabulary and grammar taught in class. How often students should be tested is up to the teachers to decide. However, most schools require that students should be tested at least twice per term -- Mid-term Exam (Chukan Shiken) and End-term Exam (Kimatsu Shiken). Both the mid-term exam and end-term exam last about three days, and cover all subjects. There are no classes during the exam period so the students can concentrate on preparing for the exams. Since there are three terms per year, students receive at least six big exams per year. However, most teachers prefer to test students more frequently, and give small exams in between.

Nationwide practice tests called moshi, on the other hand, are intended to measure students' competence in preparing for entrance examinations to lower and upper secondary schools or to universities. These moshi are prepared by private testing companies or publishers like Ohbunsha and Gakken. These moshi will tell the students where they stand on the national level in order of standings, and what chance they have of being accepted to certain schools. There are separate tests for every major subject -- English, math, Japanese, social studies, and science. Whether to give moshi in schools is up to each school to decide, but most upper secondary schools whose students advance to college choose to give moshi in the 11th and 12th grades.

G. School Textbooks

The prices of textbooks are very low, compared to those in the U.S.; the average price is about $1 (see Chart XI). To keep the prices at a minimum, publishers avoid color illustrations, use very narrow margins and strive in other ways to present as much material as possible in a fixed number of pages. Texts are dry and full of facts, with little interpretation. Photographic illustrations appear on more than half of the pages of social studies texts, but they are matchbook size. Some anecdotal material, such as famous quotations and case illustrations, appear in boxes beside the text, but they are brief. Noteworthy is the profusion of detailed maps, charts and graphs.

Editors at commercial publishing houses play an active role in shaping the textbooks from beginning to end. Editors select authors who will not cause problems and they consult informally with Ministry of Education officials and advisors to further assure the eventual acceptance of their texts.

At present, except for the Ministry of Education-written textbooks dealing with a portion of vocational education in senior high schools and special education, almost all school textbooks are written, prepared and edited by private textbook publishers.

The system leading to the authorization and adoption of school textbooks is as follows: in the case of school textbooks for compulsory education, the Minister of Education designates publishers, based on applications from private publishing firms. These designated publishers then submit to the Ministry of

Education manuscripts for authorization. The Textbook Authorization Research Council, of the Ministry of Education, recommends authorization to the Minister of Education. The Textbook Authorization Research Council is composed of school teachers and "other persons of substantial academic experience" who are appointed by the Minister of Education. Within the Council there are both part-time and full-time textbook examiners, who conduct separate examinations and submit separate reports to the Minister of Education. After authorization by the Ministry of Education, the textbooks are printed.

In the case of textbooks for post-compulsory education, the Ministry of Education does not designate publishers, but accepts manuscripts from any publisher. These manuscripts are examined, the Textbook Research Authorization Council recommends authorization of specific texts to the Minister of Education, and the textbooks are printed.

Every year there is controversy over textbook authorization. The most common changes "suggested" by the Ministry of Education are in social studies books and concern sensitive topics such as the postwar pacifist Constitution, anti-nuclear popular movements and discrimination against women in society.

Adoption of textbooks by individual schools varies according to the type of school. In national and private schools, the individual principals decide which textbooks to use. In public schools, the boards of education make the decision for an entire municipality.

During compulsory education schools, whether public, private or national, textbooks are provided free of charge by the Ministry of Education. During non-compulsory education, students are expected to purchase their own textbooks. All elementary and secondary level books are consumables and each child owns and is expected to write in his or her books. Textbooks are not returned to the school at the end of the year.

The major textbooks for teaching English in Japan are listed in Chart VII, below.

Chart VII

Major English Textbooks

| Title | Publisher |
|---|---|
| New Horizon English Course | Tokyo Shoseki |
| New Prince English Series | Kairyudo |
| Crown English Series | Sanseido |

H. Instructional Aids Equipment

The Ministry of Education revised in 1978 the Standards for the Provision of Instructional Aids and Equipment which had been in force since 1967. The new standards define 367 items for elementary schools and 312 items for lower secondary schools as instructional aids and equipment to be furnished. On the basis of these standards, the Ministry drew up the Second 10-year Plan for Provision of Instructional Aids and Equipment to Compulsory

Education Schools to be started in 1978 with a total budget of $987 million (230 billion yen). There are separate standards established for the use of instructional aids and equipment for science and mathematics in elementary and secondary schools, and in experiments and practice in the vocational educational courses.

The percentage of local public schools furnished with typical instructional aids is presented in the following chart:

Chart VIII

Percentage of Local Public Schools With Instructional Aids

| | Elementary School | Lower Secondary School | Upper Secondary School |
|---|---|---|---|
| Slide Projectors | 97.1% | 98.1% | 98.8% |
| 8mm Sound-Motion Picture Projectors | 77.1 | 78.7 | 84.7 |
| 16mm Sound-Motion Picture Projectors | 55.7 | 57.6 | 96.9 |
| Overhead Projectors | 99.5 | 99.1 | 98.8 |
| Tape recorders (open reel) | 54.4 | 61.4 | 83.3 |
| Tape recorders (cassette) | 97.4 | 98.0 | 97.1 |
| T.V. sets (black & white) | 43.3 | 40.6 | 62.7 |
| T.V. sets (color) | 98.1 | 94.3 | 90.6 |

Notes: 1) Recently new instructional aids and equipment such as language laboratories (LL), video-tape recorders (VTR) and Response Analyzers are increasingly being installed in schools, though the first item is not yet defined as necessary and the latter two are newly defined in the revised standards. The use of computers in education -- CAI (Computer-Aided Instruction) and CMI (Computer Managed Instruction) -- is also being developed in some schools.

2) Figures are for 1980.

Source: Education in Japan, Ministry of Education, May, 1983.

## I. Educational Expenses

It is a basic legal principle that educational expenditures for compulsory education (elementary and lower secondary schools) are to be provided by the national government and local public bodies and that such education is to be furnished free to the pupils. However, parents actually pay a small amount for their children to attend the public schools. The following chart, provided by the Ministry of Education, shows total costs of educational expenditures per pupil in 1980 expended from public funds for public elementary and secondary schools, and the amounts and percentages of the total paid by parents. About one tenth of total expenditures (textbooks, equipment, etc.) for public elementary schools and about one eighth of total expenditures for lower secondary schools was paid by parents.

Chart IX

Payment of Required Educational Expenses in Japan

| | Total ($) | Amount Paid by Parents ($) | Amount Paid by Public Funds ($) | % Paid by Parents |
|---|---|---|---|---|
| Elementary | 2,048.52 | 192.08 | 1,856.44 | 9.4% |
| Lower Secondary | 2,610.47 | 344.94 | 2,265.53 | 13.2% |
| Full-time Upper Secondary | 3,017.76 | 716.41 | 2,301.36 | 23.7% |

Notes: 1) School lunch expenses are not included.
2) Yen converted to dollars at the rate of $1 = Y233.

While instruction is free in public elementary and lower secondary schools, tuition fees are charged to students in national and local public upper secondary schools. Tuition fees charged in national schools are uniform throughout the country, but those charged in prefectural and municipal public schools are determined by the local authorities and are not uniform. The amount of tuition charged in private schools varies greatly. The annual tuition fee charged in full-time upper secondary schools as of 1981 was as follows:

| | |
|---|---|
| National (1982) | $288.41 |
| Local Public | $216.31 to $288.42 |
| Private (Average amount) | $746.31 |

Note: Yen converted to dollars at the rate of $1 = Y233.

The following chart gives some idea of additional expenses incurred in a public elementary school:

Chart X

Parental Expenses for Public Elementary School

| | | |
|---|---|---|
| First year: | School lunch | $131.17 |
| | Field Trips | $ 17.09 |
| | Classroom Fee | $ 12.41 |
| | Students' Association Fee | $ 0.31 |
| | PTA Fee | $ 6.75 |
| | Other | $ 6.12 |
| | Contribution | $ 0.64 |
| | Books and Teaching Materials (notebooks, pencils, etc.) | $154.85 |
| | Total | $329.07 |
| Six Year Total | | $1,974.44 |

Note: Yen converted to dollars at the rate of $1 = Y233.
Source: Ministry of Education, 1981; from Katei Gaho Magazine, February, 1984.

Chart XI

Price of Major Upper Secondary English Textbook Series

(New Horizon English Course)

| | | |
|---|---|---|
| Senior English Course | $1.09 | (Y 255) |
| English Course (Reader) | $1.18 | (Y 275) |
| English Composition (Grammar) | $0.59 | (Y 160) |
| Total (one year) | $2.96 | (Y 690) |

Note: Yen converted to dollars at the rate of $1 = Y233.

On the university level, it costs about $35 to submit an applicaton to a private university. The costs of actually attending such a university are high enough to be a serious drain on family finances.

J. Juku

Juku, as mentioned above, are private tutoring services and preparatory schools which exist primarily to help prepare students for entrance examinations. According to a survey conducted by the Ministry of Education in 1975, there are nearly 50,000 juku in Japan offering services to lower secondary and elementary school students. The total number of students attending juku was estimated at about three million. The survey reports that more than 27 percent of all sixth graders and 38 percent of all lower secondary school students attended juku in 1975.

A second study in 1976 concluded that "60 percent of the urban students in grades 7, 8, and 9 were enrolled in juku or were being coached by a private tutor. Further, the poll showed that 40 percent of all 4th, 5th, and 6th graders in Tokyo were going to a juku." In addition, 10 percent of high school students nationwide were attending juku, (Thomas P. Rolen, Japan's High Schools, University of California Press, 1983).

If we extrapolate from the 1975 figures to the 1981 school enrollment figures, and assume that the numbers are at least stable, this would mean that 517,000 6th graders and 2 million lower secondary school students attend juku. If one out of 10 high school students attends juku, as the 1976 poll concluded, and we extrapolate to 1981, that would mean 212,000 high school students attended juku nationwide in 1981.

So intense is the demand for juku that 60 percent of juku have been established since 1966, although their growth has also

been promoted by private educational industries and retired teachers, as well as by moonlighting teachers (17 percent of the juku teachers), who have capitalized on the demand for preparatory and sometimes compensatory schooling and tutoring.

So lucrative and flourishing was the business of tutoring and cram schools that in the mid-1970s many diverse companies, such as a movie company, several publishing companies and a department store, entered the market to set up their own franchise systems.

The size of juku varies from mammoth preparatory schools accommodating more than 10,000 students, available in every large city, to small ones for a half dozen students. Large juku have full-time instructors and dormitories for roonin students. Juku try to develop distinctive features and teaching methods and to achieve notiriety to ensure a cnstant flow of applications. Some of them have personnel that conduct nationwide practice examinations and also publish successful drill books. Textbooks consist mainly of former entrance examination questions.

The larger juku advertise the number of their clients who successfully enter Tokyo University and other top universities. Some juku target particular schools and even particular departments in their search for a special segment of the market. For example, most large juku have a Kokuritsu Daigaku (National University) Course aimed at famous national universities such as Tokyo University and Hitotsubashi University; a Shiritsu Daigaku (Private University) Course aimed at well-known private universities such as Keio, Waseda, and Jochi; and an Igakubu

(Medical Department) Course aimed at medical and dental schools. The curriculum in these specialized courses is an intensive review of past examination questions which are likely to appear repeatedly. The top juku have entrance exams themselves and are rumored to be more crucial to success in university entrance exams than regular school.

The average juku is small and is oriented more toward reviewing regular school work than moving students agead of their peers. The Ministry of Education national survey revealed that about one third of all juku are taught by a single teacher. Only 13 percent are really large, employing 10 or more teachers. The total enrollment of the average juku was 137 students. Typically they attend two or three afternoons a week for about two hours at a time. Only 4 percent of juku have enrollments of over 500 students.

Private tutors and neighborhood juku have been around for a long time, as have special schools for roonin. But private academies that focus on fulfilling the tutorial function on a large scale, with sophisticated methods and equipment made possible by large organizations, are a development of the late 1960s and 1970s.

Juku costs vary greatly, depending on the location and prestige of the school. The Ministry of Education estimated the 1976 level of expenditures by parents for juku education to be about $860 million (200 billion yen). With approximately 3 million students, this represents an average per year per student expenditure of about $300. The average expenditure per month for

juku in Tokyo and Osaka was $18.80 (4,400 yen) in 1975, according to a Sanwa Bank study reported in the Yomiuri Shimbun, May 4, 1975. In March, 1977, the Yomiuri carried a series that described juku monthly costs averaging over $42.92 (10,000 yen) with $1,207.55 (300,000 yen) per month in one Kyoto case of a "one teacher, one pupil" school.

Entrance fees, materials and tuition for special sessions can all run up the bill. Home tutors tend to cost about three times the average cost of juku, according to the Sanwa Bank survey. Tokyo University students who work as tutors make an average of $18,154.51 (4,230,000 yen) annually, according to the university's survey, reported in the Yomiuri, March 13, 1977.

The cost of the major juku which specialize in preparing 5th and 6th graders for the lower secondary school entrance exams is outlined in the following chart. These costs represent two years of juku study.

Chart XII

Fees of Selected Large Juku

Yotsuya Otsuka Shingaku Kyoshitsu

| | |
|---|---|
| Entrance Exam Fee | $ 10.73 |
| Entrance Fee | $ 19.31 |
| Sunday Class Sessions (2 years) | $1,030.04 |
| Total | $1,060.09 |

Nippon Shingaku Kyoshitsu

| | |
|---|---|
| Entrance Exam Fee | $ 12.88 |
| Entrance Fee | $ 8.58 |
| Sunday Class Sessions (2 years, includes spring and summer sessions) | $ 965.67 |
| Total | $ 987.13 |

Yoyogi Seminar

| | |
|---|---|
| Entrance Exam Fee | $ 12.88 |
| Entrance Fee | $ 8.58 |
| Sunday Class Sessions (2 years) | $ 733.91 |
| Spring Sessions (2 years) | $ 85.84 |
| Summer Sessions (2 years) | $ 180.26 |
| Winter Sessions (2 years) | $ 145.92 |
| Total | $1,171.67 |

Note: Yen converted to dollars at the rate of $1 = Y233.
Source: Ministry of Education, 1981; from Katei Gaho Magazine, February, 1984.

There is some correlation between juku attendance ratios and income levels, as outlined below:

Annual Income

| | 8500 or less | 8500-10,700 | 10,700-12,800 | 12,800-15,000 | 15,000-17,100 | 17,100-21,400 | Over 21,400 |
|---|---|---|---|---|---|---|---|
| percent sending children to juku | 20.3 | 32.1 | 32.3 | 31.1 | 32.3 | 41.3 | 44.1 |

With popular interest high, parents cannot ignore the cram school phenomenon, for it could mean the difference between a child's success or failure. No proof exists that cramming helps, but exam competition and anxiety about what the competition is doing drives the market. The extent to which some parents will encourage or permit the sacrifice of time and money to this undertaking is awesome. Keen entrepreneurial instincts are now shaping and further intensifying the competition and the majority of parents are going along with this trend.

Despite the high quality of public schools, education expenses are a large part of most family budgets, and the investment of time and money in preparaton at one stage compounds the incentive to protect the investment at the next stage.

K. The Test of English as a Foreign Language (TOEFL)

The Test of English as a Foreign Language (TOEFL) is given to thousands of students whose native language is not English and who plan to enter post-secondary schools in the United States and Canada. Admission committees in the various schools throughout the U.S. use the individual scores from the TOEFL to determine a student's competence in the English language. Begun in 1963, the TOEFL was first under the control of the Modern Language Association. In 1965, the College Entrance Examination Board and the Educational Testing Service (ETS) became jointly responsible for the program.

The test is divided into three sections: listening comprehension, structure and written expression, and reading comprehension and vocabulary. The highest possible combined score is 800; the lowest score is 200. There are no passing or failing scores on the TOEFL and each individual institution sets its own standards, but 400 is generally the lowest acceptable score. The official scores are valid for two years. The same test is never given twice, but the basic three-part format remains the same. This format has been in use for the past 7-8 years; before that the test was in five parts. According to ETS, the three-part format has been successful and they do not anticipate changing it. Approximately two "open administration" tests are given per year, where the student can take the test home. Generally, however, students must turn in all test materials, including the test booklet, at the end of each test.

The ETS also administers a Secondary Level English Proficiency (SLEP) test which is used for secondary level students who want to attend secondary schools in the U.S. or Canada. The SLEP is for an individual institution's internal use only and is administered only on an institutional basis, that is, tests are sent to specific institutions for their administration. ETS sends the scores back to the institutions, not to the students or to any other schools. (The TOEFL can also be administered on an institutional basis, on request.)

The ETS is developing a "Pre-TOEFL" which is easier than the TOEFL. It is designed for post-secondary individuals, primarily for industry and business use; i.e., for business level

individuals who are going to an English-speaking environment to work. The assumption is that these individuals need to have enough English to conduct business, but not necessarily the same kind or the same level of English-language proficiency as a student enrolled in a college or university. No information on when "Pre-TOEFL" will be available or where it will be offered.

In Japan, the TOEFL is offered 12 times a year, in February, May, September, and November in 10 cities (Tokyo, Hiroshima, Fukuoka, Osaka, Nagoya, Sapporo, Sendai, Yokohama, Kobe, and Okinawa). There are 6 International Test Dates (Saturdays) and 6 Special Test Dates (Fridays). There are 24 test centers in Japan; Tokyo has the most with 8. For Japanese wishing to take the test, the application form can be obtained either by writing to the Educational Testing Service in Princeton, New Jersey, or through the Fulbright Commission/Center for International Educational Exchange (CIEE) in Tokyo. CIEE acts as and agent for the ETS in Japan, handling applications, test administration, collection and delivery of the completed tests to ETS. Some Japanese universities which have exchange programs with U.S. colleges and universities also have application forms available to their students. Applicants send the application fee of $23 for Saturday and $31 for Friday (the domestic fees are $21 and $29, respectively)) in the form of a remittance check to the Educational Testing Service in Princeton, New Jersey.

According to ETS, 18,600 tests were given in Japan in the 1981-82 school year. The Saturday dates are the most popular, and the peak times are November and May (because they correspond

most closely with U.S. and Canadian university admissions deadlines). The majority of people taking the TOEFL in Japan are college students who wish to spend part of their undergraduate program (usually 1-2 years) in a U.S. college. (Some Japanese universities admit credits received at U.S. colleges, and count them towards graduation requirements.) Other applicants are college graduates who wish to attend graduate schools in the U.S., or elite employees of major companies or government agencies, who are sent to graduate schools (usually business schools) at company or government expense.

For Japanese students who plan to enter schools in the U.S. or Canada, obtaining an acceptable score is not easy. Listening comprehension is considered to be the most difficult section of the test, because listening comprehension skills are not emphasized in English classes. Generally speaking, a total score of 600 is considered excellent, while any score falling below 400 is regarded as poor.

There are special preparation schools such as the TOEFL Academy, that offer evening courses for applicants preparing for the test. Classes consist of an intensive review of former TOEFL examination questions, listening comprehension drills, and other helpful tips. However, most applicants choose to prepare for the test by themselves, using available exercise books and tapes.

There are 4 or 5 companies that publish TOEFL practice exercise books. The ETS publishes its own practice test book, with a record or cassette tape with listening comprehension practice tests. ETS does not license or accredit any other books

or any TOEFL preparation courses or schools. The most popular independent TOEFL preparation books are published by Barron's and Arco. Most books come with a record or tape of a practice listening comprehension test. The books sell for approximately $9 - $25, depending on whether or not they come with a record or tape.

## II. CAI and Japanese Education

### A. Survey of Micro-Computers in Educational Facilities

The Ministry of Education published a survey of micro-computers in Japanese educational facilities in January 1983. (These figures were reported in an article by Takahashi Mamoru, editor, in Nagai Kyooiku, June 17, 1983.)

According to the survey, the degree of computerization (micro-computers) is 0.1 percent for elementary schools, 1.8 percent for lower secondary schools, and 45.6 percent for upper secondary schools. The term micro-computers refers to small computers such as personal computers, pocket computers (pocket translators), and office computers.

The degree of computerization in elementary and lower secondary schools is still low as can be seen in Chart XIII. At the elementary level, the total number of schools equipped with computers was 36 (27 public schools and 9 private schools). The figure is higher for the lower secondary schools, with 94 public schools and 100 private schools, (totaling 194 schools) equipped with computers. The degree of computerization is high for private lower secondary schools (18.2 percent compared to 0.9 percent for public lower secondary schools) because in some cases the computers are jointly owned by affiliated lower and upper secondary schools.

Chart XIII

Degree of Computerization in Elementary and Lower Secondary Schools

| Type of School | Number of Computerized Schools | Total Number of Schools | Degree of Computer-ization (%) | Average Number of Computers in Computerized Schools |
|---|---|---|---|---|
| Elementary | | | | |
| Public | 27 | 24,802 | 0.1% | 1.1 |
| Private | 9 | 168 | 5.4% | 2.4 |
| TOTAL | 36 | 24,970 | 0.1% | 1.4 |
| Lower Secondary | | | | |
| Public | 94 | 10,252 | 0.9% | 1.3 |
| Private | 100 | 550 | 18.2% | 3.1 |
| TOTAL | 194 | 10,802 | 1.8% | 2.2 |

Note: Figures as of May 7, 1982.

The degree of computerization in upper secondary schools is 49.8 percent for public schools and 32.2 percent for private schools. The average is 45.6 percent; nearly half of the total number of upper secondary schools have computers.

The prefectures with a high percentage of computerization in public schools were Iwate (90.6%), Nara (82.1%), Fukui and Nagano (75%), Osaka (74.6%), Chiba (73.1%), and Kagoshima (70.5%). On the other hand, the prefectures with a low degree of computerization were Saga (10.5%), Yamagta (19.0%), Tochigi (20.0%), Fukuoka (22.6%), and Kumamoto (23.8%). Ibaragi, Gunma, Shizuoka, and Kochi prefectures were also under 30 percent.

The average number of computers in individual schools equipped with computers was also calculated. Iwate prefecture, which has the highest percentage of computers, has 3.3 computers per school. Most schools in Iwate have 3 computers; 2 schools have 4 computers, and 2 schools have 7 computers. Iwate prefecture began installing computers in its schools in 1980. Nara, the prefecture with the second highest percentage, averages 2.7 computers per school. However, Saga, the prefecture with the lowest number of schools with computers, has an average of 4.3 computers per school equipped with computers, and Yamagata, the prefecture with the second lowest percentage of schools with computers has an average of 8.9 computers per school (2 schools have 24 computers each). Therefore, it is dangerous to judge the degree of computerization by just looking at the percentage. There are so few computers that percentages are misleading.

Chart XIV

Degree of Computerization in Upper Secondary Schools

| Prefectures | Public Schools | | | Private Schools | | |
|---|---|---|---|---|---|---|
| | Number of Schools with Computers | Total Number of Schools | Degree of Computer-ization (%) | Number of Schools with Computers | Total Number of Schools | Degree of Computer-ization (%) |
| Hokkaido | 108 | 270 | 40.0 | 3 | 52 | 5.8 |
| Aomori | 25 | 73 | 34.2 | 9 | 17 | 52.9 |
| Iwate | 77 | 85 | 90.6 | 3 | 13 | 23.1 |
| Miyagi | 27 | 86 | 31.4 | 3 | 17 | 17.6 |
| Akita | 25 | 68 | 36.8 | 3 | 5 | 60.0 |
| Yamagata | 12 | 63 | 19.0 | 4 | 15 | 26.7 |
| Fukushima | 61 | 95 | 64.2 | 7 | 17 | 41.2 |
| Ibaragi | 24 | 95 | 25.3 | 6 | 17 | 35.3 |

Prefectures

| | Public Schools | | | Private Schools | | |
|---|---|---|---|---|---|---|
| | Number of Schools with Computers | Total Number of Schools | Degree of Computer-ization (%) | Number of Schools with Computers | Total Number of Schools | Degree of Computer-ization (%) |
| Tochigi | 13 | 65 | 20.0 | 2 | 14 | 14.3 |
| Gunma | 19 | 70 | 27.1 | 3 | 12 | 25.0 |
| Saitama | 73 | 149 | 49.0 | 15 | 41 | 36.6 |
| Chiba | 95 | 130 | 73.1 | 10 | 45 | 22.2 |
| TOKYO | 120 | 206 | 58.3 | 120 | 244 | 49.2 |
| Kanagawa | 79 | 150 | 52.7 | 19 | 72 | 26.4 |
| Niigata | 49 | 121 | 40.5 | 4 | 13 | 30.8 |
| Toyama | 25 | 47 | 53.2 | 3 | 9 | 33.3 |
| Ishikawa | 33 | 53 | 62.3 | 3 | 8 | 37.5 |
| Fukui | 24 | 32 | 75.0 | 3 | 5 | 60.0 |
| Yamanashi | 20 | 38 | 52.6 | 3 | 10 | 30.0 |
| Nagano | 66 | 88 | 75.0 | 4 | 17 | 23.5 |
| Gifu | 54 | 79 | 68.4 | 3 | 15 | 20.0 |
| Shizuoka | 28 | 99 | 28.3 | 12 | 38 | 31.6 |
| Aichi | 88 | 164 | 53.7 | 21 | 50 | 42.0 |
| Mie | 35 | 60 | 58.3 | 6 | 15 | 40.0 |
| Shiga | 24 | 42 | 57.1 | 0 | 7 | 0.0 |
| Kyoto | 26 | 60 | 43.3 | 8 | 36 | 22.2 |
| Osaka | 129 | 173 | 74.6 | 26 | 85 | 30.6 |
| Hyogo | 103 | 165 | 62.4 | 16 | 47 | 34.0 |
| Nara | 32 | 39 | 82.1 | 7 | 13 | 53.8 |
| Wakayama | 17 | 45 | 37.8 | 0 | 5 | 0.0 |
| Tottori | 15 | 29 | 51.7 | 3 | 5 | 60.0 |
| Shimane | 26 | 44 | 59.1 | 2 | 9 | 22.2 |
| Okayama | 45 | 89 | 50.6 | 5 | 21 | 23.8 |
| Hiroshima | 34 | 101 | 33.7 | 13 | 34 | 38.2 |
| Yamaguchi | 44 | 72 | 61.1 | 7 | 20 | 35.0 |
| Tokushima | 19 | 50 | 38.0 | 2 | 5 | 40.0 |
| Kagawa | 16 | 33 | 48.5 | 3 | 9 | 33.3 |
| Ehime | 29 | 58 | 50.0 | 4 | 12 | 33.3 |
| Kochi | 11 | 42 | 26.2 | 1 | 7 | 14.3 |
| Fukuoka | 26 | 115 | 22.6 | 15 | 62 | 24.2 |
| Saga | 4 | 38 | 10.5 | 0 | 6 | 0.0 |
| Nagasaki | 33 | 69 | 47.8 | 4 | 21 | 19.0 |
| Kumamoto | 15 | 63 | 23.8 | 6 | 22 | 27.3 |
| Oita | 37 | 57 | 64.9 | 5 | 16 | 31.3 |
| Miyazaki | 22 | 45 | 48.9 | 2 | 15 | 13.3 |
| Kagoshima | 62 | 88 | 70.5 | 2 | 19 | 10.5 |
| Okinawa | 21 | 51 | 41.2 | 0 | 5 | 0.0 |
| TOTAL | 1,970 | 3,954 | 49.8 | 400 | 1,242 | 32.2 |

Note: Figures as of May 1, 1982.

Chart XV shows the average number of computers per school in 2231 upper secondary schools. These 2231 schools represent 94.1 percent of the total number of schools with computers.

Chart XV

Number of Computers Per Upper Secondary School With Computers

| Number of Computers | Total | | Public | | Private | |
|---|---|---|---|---|---|---|
| | Number of Schools | % | Number of Schools | % | Number of Schools | % |
| 1 | 930 | 41.7 | 744 | 40.4 | 186 | 47.7 |
| 2 | 353 | 15.8 | 300 | 16.3 | 53 | 13.6 |
| 3 | 242 | 10.8 | 217 | 11.8 | 25 | 6.4 |
| 4-5 | 227 | 10.2 | 193 | 10.5 | 34 | 8.7 |
| 6-7 | 155 | 6.9 | 138 | 7.5 | 17 | 4.4 |
| 8-10 | 131 | 5.9 | 110 | 6.0 | 21 | 5.4 |
| 11-20 | 131 | 5.9 | 98 | 5.3 | 33 | 8.5 |
| 21-up | 62 | 2.8 | 41 | 2.2 | 21 | 5.4 |
| TOTAL | 2,231 | 100.0 | 1,841 | 100.0 | 390 | 100.0 |
| Average number of computers per school | 4.1 | | 3.9 | | 4.8 | |

Note: Figures as of January 1, 1983, from the Ministry of Education.

Chart XVI shows a breakdown of the use of computers of 62 upper secondary schools according to fields of study for which the computers are used.

Chart XVI

Upper Secondary Schools with More than 21 Computers

(By Field of Study)

| | Field of Study | Public | Private | Total |
|---|---|---|---|---|
| Single | | | | |
| | General | 1 | 4 | 5 |
| | Technical | 35 | 2 | 37 |
| | Commercial | 1 | 1 | 2 |
| Combined | | | | |
| | General/Technical | 1 | 4 | 5 |
| | General/Commercial | 1 | 7 | 8 |
| | Technical/Commercial | 2 | 0 | 2 |
| | General/Technical/Commercial | 0 | 2 | 2 |
| | General/Science & Math | 0 | 1 | 1 |
| TOTAL | | 41 | 21 | 62 |

Notes: 1) *Single means that only a single curriculum is followed at these schools. Combined means that more than one kind of curriculum is followed at these schools.
2) Figures as of January 1, 1983, from the Ministry of Education.

Chart XVII

How Microcomputers are Used in Schools

(Read, for example, for public elementary schools there are a total of 27 schools equipped with computers. In 23 of the schools, or 85.2 percent, computers are used for CAI; in 6 schools, or 22.2 percent, computers are used for CMI. In some cases, computers are used for more than one purpose, so that the total number may not equal the total number in the right-hand column.)

| | CAI | CMI | Computer Education (Computer Literacy) | Extra-Curricular Activities | Number of Schools Equipped with Computers |
|---|---|---|---|---|---|
| Elementary Schools | | | | | |
| Public | | | | | |
| (#) | 23 | 6 | 0 | 15 | 27 |
| (%) | 85.2 | 22.2 | 0.0 | 55.6 | |
| Private | | | | | |
| (#) | 2 | 8 | 0 | 2 | 9 |
| (%) | 22.2 | 88.9 | 0.0 | 22.2 | |
| Total | | | | | |
| (#) | 25 | 14 | 0 | 17 | 36 |
| (%) | 69.4 | 38.9 | 0.0 | 47.2 | |
| Lower Secondary Schools | | | | | |
| Public | | | | | |
| (#) | 31 | 60 | 2 | 32 | 94 |
| (%) | 33.0 | 63.8 | 2.1 | 34.0 | |
| Private | | | | | |
| (#) | 18 | 76 | 2 | 31 | 100 |
| (%) | 18.0 | 76.0 | 2.0 | 31.0 | |
| Total | | | | | |
| (#) | 49 | 136 | 4 | 63 | 194 |
| (%) | 25.3 | 70.1 | 2.1 | 32.5 | |

| | CAI | CMI | Computer Education (Computer Literacy) | Extra-Curricular Activities | Number of Schools Equipped with Computers |
|---|---|---|---|---|---|
| Upper Secondary Schools | | | | | |
| Public | | | | | |
| (#) | 688 | 1,209 | 318 | 766 | 1,970 |
| (%) | 34.9 | 61.4 | 16.1 | 38.9 | |
| Private | | | | | |
| (#) | 131 | 294 | 59 | 111 | 400 |
| (%) | 32.8 | 73.5 | 14.8 | 27.8 | |
| Total | | | | | |
| (#) | 819 | 1,503 | 377 | 877 | 2,370 |
| (%) | 34.6 | 63.4 | 15.9 | 37.0 | |

Notes: 1) CAI (Computer Aided Instruction)

The use of computers by teachers for demonstration purposes -- to show geometrical figures, to help solve math questions, etc. At the elementary level, the percentage of CAI is 69.4 percent , but since the number of computers in schools is low, students have few opportunities to use them in the classroom.

2) CMI (Computer Managed Instruction)

The use of computers by teachers to manage students' records (grades, health records, etc.), and to find helpful educational information. Administrators use computers for school management.

3) Computer Education

Computer literacy through understanding math rules. Standard math texts in lower and upper secondary schools have short sections on mathematical applications of computers. This does not refer to computer education for job training.

4) Extra-curricular Activities

After-school club activities; mostly CAI.

As this survey has shown, there are very few computers in Japanese schools. Most schools have only between one and five computers, which means that there are not enough for an entire classroom of students to use at one time. Computers in these schools are probably used only for demonstration purposes.

Only 2.3 percent of the schools have more than 21 computers. Furthermore, when you examine those schools, most are technical or commercial schools. Very few are general curriculum schools. Also, except in elementary schools, most computers in schools are used for CMI, not CAI. Even at the elementary level, where 69.7 percent of the computers are used for CAI, there are so few computers that students cannot have much of an opportunity to use them.

Despite the small number of computers now in Japanese classrooms, the education market for micro-computers is a considered very promising area for future development. This area of computer application is essentially untouched, but in the near future, extensive numbers of micro-computers will spread into classrooms nationwide since Japanese schools will most likely introduce a computer science curriculum soon (according to the Japan Soft Bank Corporation). When that occurs, the educational software market will experience a boom. It stands to reason that when that occurs, the market for educational software for home use will also increase dramatically.

B. Tsukuba University Experimental CAI Project

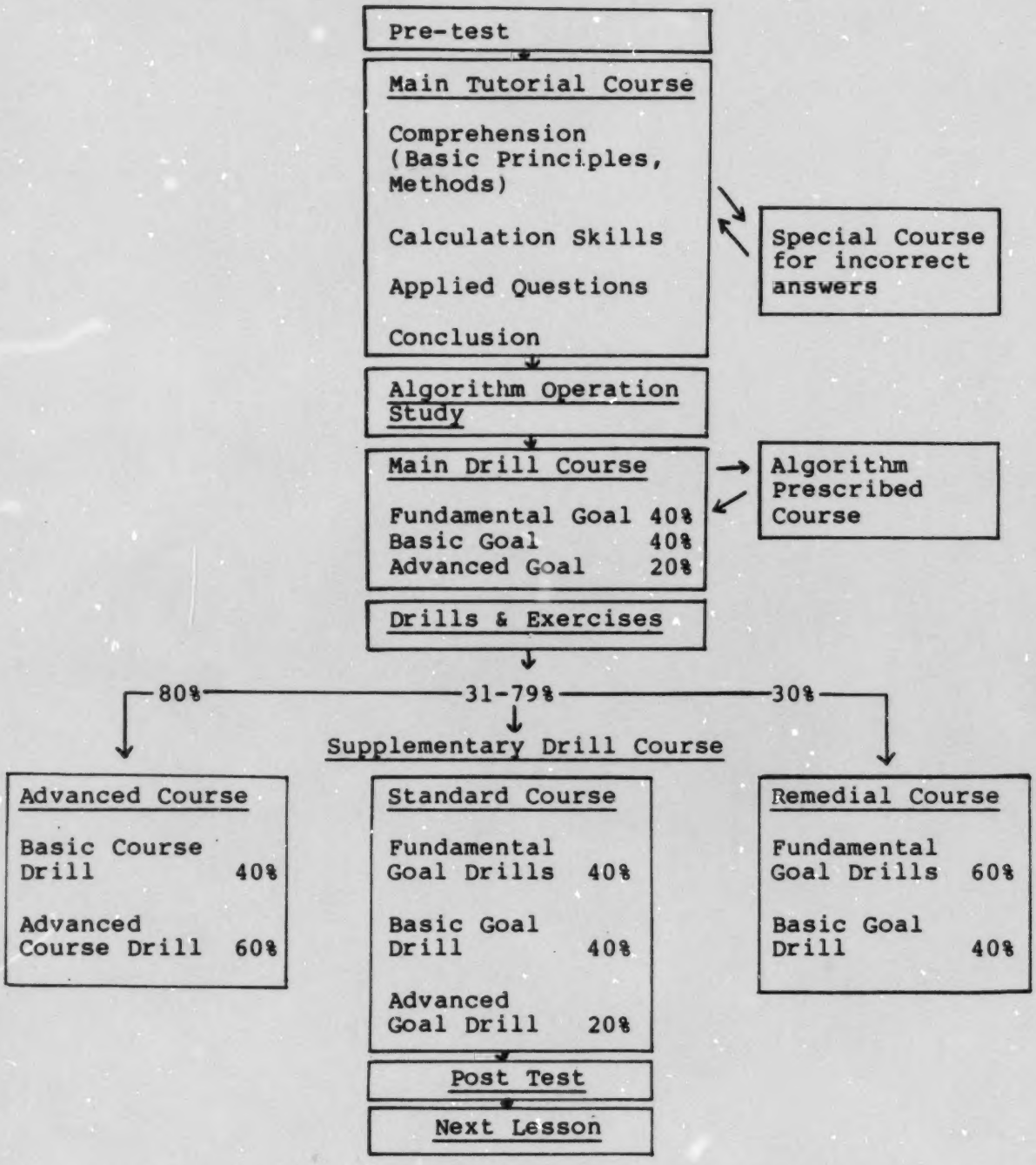
As can be seen from the Ministry of Education survey, computer aided instruction is only beginning to be used in Japan. One experimental program is being used for math instruction in the Takezono Higashi Elementary School on an experimental basis. The CAI used there has been developed by researchers at Tsukuba University Scientific Information Management Center (Kagaku Joohoo Shoori Centa).

The experimental program began operation in 1977 when the researchers began to study the problem of CAI and to develop the tutorial system now in operation. The classroom use of the CAI program began in 1978. The Tsukuba University Research group is responsible for developing the tutorial system; the Takezono Higashi Elementary School is responsible for carrying out the program and for guidance in the classroom.

The CAI program introduced an Audio Tutorial System. There are 40 TV monitors and 40 keyboards for 40 students. The students study individually in the following manner:

Worksheets are distributed to the students and a corresponding study program is shown on the TV monitor. Students answer questions asked by the computer by pushing the appropriate keys and proceed according to the computer's instructions. The computer picks the instructions according to the individual student's answers. Students who answer correctly advance to the next assignment, displayed on the screen. Students who answer incorrectly advance to a special, alternate program. (See flow chart for details.)

Flow Chart for CAI Math Course




Notes: 1) Note the similarity to Bill Smook's authoring system.
2) The above information on the Tsukuba CAI project was translated from "An Example of CAI in the Classroom" by Setsuko Kamijo; Kyooiku Kogaku, Chapter 8, published in May, 1983.

## III. Japanese Home Computer Industry

### A. Hardware Industry

The home/hobby market for personal computers in 1983 was estimated by the EDP Japan Report to be 45 percent (or 427,500 units) of the total personal computer market. MSX, the new standard system developed by MicroSoft Japan and ASCii, is expected to result in a dramatic expansion of the home personal computer market. By May, 1984, approximately 155,000 MSX units had been shipped. That number is expected to reach 500,000 units by the end of 1984, and 1 million units by the end of 1985.

Most of the home-use software is cassette-based, so we can make the same assumption about the hardware. As an additional approximation of the home market, we can look at the market for business-use personal computers, under the assumption that in Japan business-use personal computers will spread from offices to homes, as they have in the United States.

Executives of 22 major personal computers makers, who participated in a survey by OA Pasocon Magazine in November 1983, were all surprised at the fast growth of the industry. If the market continues to grow at the current rate, it is estimated that each office worker will have his or her own personal computer in the next five years. The following chart shows the growth of the personal computer market since 1980 and projections for 1983 and 1984.

Chart XVIII

Industry Analysis of Personal Computers

(Japan Domestic)

(Average figures from 22 personal computer makers)

| Year | Annual Sales | Growth Rate | 8-Bit PC's Sold | 16/32-Bit PC's Sold | Market Figure ($ million) |
|---|---|---|---|---|---|
| 1980 | 116,000 | ---- | 116,000 | 0 | 142 |
| 1981 | 300,000 | 259% | 300,000 | 0 | 429 |
| 1982 | 650,000 | 217% | 600,000 | 50,000 | 931 |
| 1983 | 970,000 | 149% | 800,000 | 170,000 | 1157 |
| Estimate: | | | | | |
| 1984 | 1,390,000 | 143% | 990,000 | 400,000 | 1472 |
| 1985 | 1,870,000 | 135% | 1,170,000 | 700,000 | 1828 |

At present, personal computers used in offices are mostly 8-bit machines. Mr. Atsuyoshi Ohuchi, Vice President of NEC (Nippon Electric Company) said in an interview with OA Pasocon Magazine that office use of 16-bit and 32-bit computers will increase in the near future. A turning point will probably come within the next 4-5 years, during which time 16-bit computers will take over 8-bit computers in the office. However, 8-bit computers will continue to be widely used at home because of their lower cost. Mr. Ohuchi believes that the most popular items purchased for home use in the next 4 to 5 years will be automatic translators, automatic menu makers (jido kondateki, a program which automatically makes up menus when available ingredients are typed in), and automatic cookers (jido choriki). A time may come in the near future when low cost personal computers will be as popular as television sets or telephones.

When NEC started in the personal computer business in 1976, their goal was to gain the same market share in computers as Kirin Beer had in the beer market in Japan (about 50 percent). In 1976 NEC put out their TK 80, and in 1978, their PC 8000. By the end of 1983, NEC held 40 percent of the personal computer market in Japan. As of March, 1984 they hold approximately 45 percent of the Japanese market (according to a Morimoto contact).

A survey of the Soft Bank Corporation (software company) catalog for Autumn 1983 revealed the following major hardware makers and system types. The hardware makers are listed in order of the frequency with which they appear in the catalog; that is, they are listed with the most popular first. (In this case the popularity is determined by the software makers, not the consumer.)

Chart IXX

Major Japanese Hardware Makers and Popular System Types

| | |
|---|---|
| NEC (Nippon Electric Co.) | PC-6001 |
| | PC-6001 MKII |
| | PC-8001 |
| | PC-8001 MKII |
| | PC-8801 |
| | PC-9801 |
| | N5200/05 |
| | PC-2001 |
| | PC-8201 |
| Sharp | MZ-80B |
| | MZ-2000 |
| | MZ-2200 |
| | MZ-80K/C |
| | MZ-1200 |
| | MZ-700 |
| | MZ-3500 |
| | X-1 |
| | PC-1500 |
| Fujitsu | FM-8 |
| | FM-7 |
| | FM-11 |
| Toshiba | Pasopia OA |
| | Pasopia 5 (T) |
| | Pasopia 7 |
| | Pasopia 16 |
| Epson | QC-10 |
| | QC-20 |
| | HC-20 |
| Hitachi | Basic Master Jr. |
| | Level 3 |
| | Level 3 Mark II |
| | Level 3 Mark V |
| Oki Denki | IF800 M10 |
| | IF800 M20 |
| | IF800 M30 |
| | IF800 M50 |
| Matsushita | JR-100 |
| | JR-200 |
| | My Brain 3000 |

| | |
|---|---|
| Sord | M-5 |
| | M-23 |
| | M-203 |
| | M-223 |
| | M-243 |
| | M-343 |
| Apple | Apple II |
| | Apple IIe |
| | Apple II jplus |
| Tandy | TRS-80 MI |
| | TRS-80 MII |
| | TRS-80 MIII |
| Commodore | Vic-1001 |
| | CBM-3032 |
| Mitsubishi | MULTI 8 |
| | MULTI 16 |
| Seiko | 5900 II |
| | 7500 |
| | 9500 |
| Nihon Unipack | UP-10E M15 |
| | UP-10E M30 |
| | UP-10E M50 |
| | UP-10Q M30 |
| Yokohama H.P. | PHC-25 |
| Casio | FP-1000/1100 |
| Canon | X-07 |
| Sony | SMC-70 |
| Hal Kenkyujo | PCG-8100 |
| | PCG-8000 |
| | PCG-700 |

In another survey, reported in the February 6, 1984 issue of Denppa Shimbun, one independent computer store from each prefecture was surveyed and asked what were the five most popular personal computers at that particular store. (Manufacturer's stores were excluded from the survey.) The results are in Chart XX. An analysis of this survey reveals that NEC clearly dominates the market. Of the 119 personal computers chosen, 60 were NEC models, 22 were Fujitsu, and 19 were Sharp. All of the other 9 makers mentioned by the computer stores, were reported fewer than four times as a top manufacturer. Half of those surveyed said that NEC machines were their best selling machines; only 25 percent said Sharp sold best, and 13 percent reported that Fujitsu was the top selling manufacturer.

Chart XX

Best Selling Personal Computers

(Attitudinal Survey of Computer Shop Owners)

| Name of City (Prefecture) | #1 | #2 | #3 | #4 | #5 |
|---|---|---|---|---|---|
| Sapporo (Hokkaido) | PC-9801F (NEC) | PC-8801mKII (NEC) | PC-9801mKII (NEC) | PC-6001mKII (NEC) | PC-8001mKII (NEC) |
| Yamagata (Yamagata-ken) | FM-7 (Fujitsu) | PC-8801mKII (NEC) | X-1C (Sharp) | PC-8001mKII (NEC) | PC-6601 (NEC) |
| Furukawa (Miyagi-ken) | PC-6001mKII (NEC) | PC8001mKII (NEC) | FM-7 (Fujitsu) | PC-8801mKII (NEC) | PC-9801F (NEC) |
| Tsukuba (Ibaragi-ken) | PC-9801F (NEC) | PC-100 (NEC) | PC-8801mKII (NEC) | QC-10 (Epson) | FM-7 (Fujitsu) |
| Ueda (Nagano-ken) | PC-6601 (NEC) | PC-6001mKII (NEC) | MZ-2000 (Sharp) | PC-8801mKII (NEC) | PC-8001mKII (NEC) |
| Shinhatsuda ( -ken) | MZ-2200 (Sharp) | PC-6601 (NEC) | X-1 (Sharp) | PC-6001mkII (NEC) | PC-8001mKII (NEC) |
| Chiyoda-ku (Tokyo) | FM-7 (Fujitsu) | MB-H1 (Hitachi) | SC-3000 (Sega) | PC-9801F (NEC) | PC-8801mKII (NEC) |
| Shibuya-ku (Tokyo) | PC-9801F (NEC) | PC-8801mKII-30 (NEC) | PC 6601 (NEC) | FM-7 (Fujitsu) | PC-6001mKII (NEC) |
| Sagamihara (Kanagawa-ken) | PC-9801F (NEC) | PC-9801E (NEC) | FM-7 (Fujitsu) | FM-11 (Fujitsu) | PC-8801mKII (NEC) |
| Yokohama (Kanagawa-ken) | PC-6001mKII (NEC) | FM-7 (NEC) | PC-8001mKII (Fujitsu) | PC-8001mKII (NEC) | X-1 (Sharp) |
| Shizuoka (Shizuoka-ken) | X-1C (Sharp) | PC-8001mKII (NEC) | FM-7 (Fujitsu) | FM-X (Fujitsu) | HB-55 (Sony) |
| Nagoya (Aichi-ken) | PC-8801mKII (NEC) | PC-6001mKII (NEC) | YIS-503 (Yamaha) | X-1C (Sharp) | FM-7 (Fujitsu) |
| Toyota (Aichi-ken) | MZ-2200 (Sharp) | X-1 (NEC) | PC-9801F (NEC) | MZ-5500 (Sharp) | Multi 16 (Mitsubishi) |
| Fukui (Fukui-ken) | HX-10D (Toshiba) | PC-8801mKII (NEC) | X-1C (Sharp) | FM-7 (Fujitsu) | PC-9801F (NEC) |
| Kyoto | PC-8801mKII-30 (NEC) | PC-9801E (NEC) | PC-9801F (NEC) | PC-8801mKII (NEC) | ---- |
| Osaka | FM-7 (Fujitsu) | PC-8001mKII (NEC) | PC-8801mKII (NEC) | PC-9801F (NEC) | X-1C (Sharp) |
| Osaka | PC-8801mKII (NEC) | PC-9801F (NEC) | PC-8001mKII (NEC) | MB-H1 (Hitachi) | FM-7 (Fujitsu) |
| Amagasaki (Hyogo-ken) | FM-11 (Fujitsu) | FM-7 (Fujitsu) | Multi 16 (Mitsubishi) | QC-10 (Epson) | F-9450 II (Fujitsu) |
| Tokushima (Tokushima-ken) | X-1C (Sharp) | FM-7 (Fujitsu) | MZ-2200 (Sharp) | PC-6001mKII (NEC) | PC-9801F (NEC) |
| Hamada | C-280 (Panafacom) | IF-800 (50) (Okiden) | QC-10 (Epson) | PC-9801F (NEC) | FM-7 (Fujitsu) |
| Shimonoseki (Fukuoka-ken) | MZ-3500 (Sharp) | X-1C (Sharp) | X-1D (Sharp) | MZ-2000 (Sharp) | PC-6601 (NEC) |
| Kurumeshi (Saga-ken) | PC-6001mKII (NEC) | PC-8001mKII (NEC) | PC-8801mKII (NEC) | HX-10S (Toshiba) | HB-55 (Sony) |
| Iizuka (Fukuoka-ken) | PC-8801mKII-30 (NEC) | HB-55 (Sony) | SC-3000 (Sega) | PC-9801F (NEC) | MB-H1 (Hitachi) |
| Kumamoto (Kumamoto-ken) | MZ-2200 (Sharp) | MZ-2000 (Sharp) | FM-7 (Fujitsu) | PC-8001mKII (NEC) | ---- |
| Kagoshima (Kagoshima-ken) | X-1 (Sharp) | MZ-2000 (Sharp) | FM-7 (Fujitsu) | PC-8801mKII (NEC) | PC-9801F (NEC) |



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Micro-computer stores or personal computer stores (so-called Micon or Pasocon Senmonten) are the main retailers for personal computers in Japan. These specialized computer stores offer computer seminars with the cooperation of manufacturers. Some manufacturers even rent or provide computers for these seminars. The employees of these specialized stores are trained and they also give advice over the phone to customers.

Since the main line of merchandise for home appliance stores (denkiten) are video equipment and seasonal appliances such as air conditioners and heaters, they have so far been reluctant to carry personal computers. However, as the market for home personal computers continues to grow, many home appliance stores are showing interest in selling personal computers (such as 8-bit and MSK) and are starting to train their employees.

A few stores such as Flex Japan (a franchised chain) specialize in used computers. Flex Japan now has 6 stores, but they have plans to expand to 20 in the near future. Because of the limited supply of computers, demand exceeds the supply and these used computer stores are doing well. They buy computers directly from customers and computers stores, as well as from manufacturers. The standard length of the warranty for personal computers is one year for new computers, and three months for used computers. For new computers, the manufacturer provides the parts free to the distributor, who provides the labor.

B. Software Industry

In the Japanese home computer market, the best-selling software packages are those that help families better manage time and information. Eductional and simple mathematical programs, such as programs to balance a bank statement, are the second most popular kinds of packages; but they are used by only one fourth of the personal computer users in Japan. Games are used by less than 13 percent of all home computer users in Japan (InfoWorld, September 9, 1983).

According to a Fujitsu Limited report, sales of education-oriented software accounts for about 10 percent of marketed software in Japan. In 1983, sales of education-oriented software was about $6 million (1.4 million yen).

Using the Soft Bank catalog for Autumn 1983, a survey has been done of software available for home use. (See Chart XXI.) Japan Soft Bank is the largest distributor of packaged software in Japan, with software sales in the Japanese market estimated in September 1983 to be $50 million.

Of the Soft Bank software for home use, most are games. Home use software retails for $12.02 to $64.38; educational software for home use averages $17.17 per cassette. All of the software for home use that was surveyed is cassette-based.

The subjects covered by the educational software are math, English, world history, Japanese history and science. Other software available includes automatic translators, automatic menus, kanji word processors, letter writers, address lists, calorie counters, housekeeping expense records (kakeibo), and stock management.

Cassette tapes (costing generally $12.88 to $21.46) are handled by distributors the same as records are handled. There is no warranty; a defective tape can be returned to the distributor for replacement.

Computer Managed Instruction (CMI) software was also examined in the survey. CMI is more expensive than home use software, averaging $188.84 per package. This specialized software is generally diskette-based.

To give an idea of the kinds of available software for home use, several advertisements for software were translated, and the software is described below.

Manten-kun (the name is that of a fictional animal, familiar to all Japanese children)

Software Maker: Land Computer Company

Hardware Requirements: Fujitsu Micro 7 with kanji ROM card

Price: $42.06 per volume (3 cassettes per volume; 6 volumes)

This is a math and calculation skill game designed for pre-school through 2nd grade (3-7 years old). The student does a simple calculation problem. If correct, "Manten-kun", whose image is on the screen, smiles and the student advances to the next problem. If the student is incorrect, "Manten-kun" gives a hint and the student can try again. Only one hint per problem is given. At the end of the problems, the score is automatically given.

Tanoshii Sansu (Fun Calculations)

Software Maker: Stratford Computer Company

Hardware Requirements: not given

Price: $12.88

This is a math game designed for 4th through 7th grades (9-12 years old). It tests geometry, calculation and easy algebra. It can be used with any standard textbook because it follows the Ministry of Education guidelines. The computer gives an explanation of the theory or method and the student is asked to use that to do problems. At the end of the problems, the scores are given. No hints are given, but the student can go back and re-do incorrect problems.

Chuugaku Hisshu Eitango (Junior High Required English Vocabulary)

Software Maker: Stratford Computer Company

Hardware Requirements: not given

Price: $16.31 per grade

This is a two part program. Part one is a review of the vocabulary and part two tests the vocabulary just reviewed. In the test, the Japanese word is given and the student must type in the correct English equivalent. The scores are given at the end of each test and the incorrect words are identified for the student to study further.

Calorie Calculator

Software Maker: Oak Computer Company

Hardware Requirements: not given

Price: $24.89

This "set" comes with two cassette tapes and a manual. It provides nutritional analysis, food component analysis, a record of daily meals, and menu examination.

Note: All above prices converted from yen at the rate of $1 = Y233.

Chart XXI

A Survey of Educational Software on the Market in Japan

from The Soft Bank Catalog Autumn, 1983

| Company<br>Product Name | System Type<br>(Notes) | Price*<br>($) | Merchandise<br>Code |
|---|---|---|---|
| **Image Soft** | | | |
| English vocabulary and idioms for: | Cassette<br>PC 6001 | | |
| college entrance exams | | $12.88 | NEI E13008 |
| high school entrance exams | | 12.88 | NEI E13009 |
| **Usui Personal Computer Center** | | | |
| English dictionary all vocabulary and idioms in the following texts: | Cassette<br>MZ 80K/C<br>MZ 700 | | |
| New Prince English Course | | 17.17 | SHUB 13005 |
| New Horizon English Course | | 17.17 | SHUB 13021 |
| **Oak** | | | |
| Kanji Study | Cassette | | |
| Math: Addition | MZ 700 | 19.31 | S10E15028 |
| Subtraction | | 19.31 | S10E15029 |
| Multiplication | | 19.31 | S10E15030 |
| Division | | 19.31 | S10E15031 |
| Fraction | | 19.31 | S10E15032 |
| 7th Grade Math (6 vol.s) | Cassette<br>PC 8801 | 29.19 X 1 vol<br>19.31 X 5 vol | |
| 8th Grade Math (5 vol.s) | | 29.19 X 1 vol<br>19.31 X 4 vol | |
| 9th Grade Math (6 vol.s) | | 29.19 X 1 vol<br>19.31 X 5 vol | |
| **Koei Micro-Computer System** | | | |
| Management of Student Records | ROM<br>2 sided | 291.85 | SHKN 14008 |
| Management of Student Records KM II E-1 (25 boys, 25 girls per class, can manage 10 classes, 5 subjects, score 50 points each) | 5" floppy disk | 248.93 | SHKN 13001 |
| KM II E-2 (50 students per class can manage 107 classes, 5 subjects, score 100 points each) | | 248.93 | SHKN 13002 |

Sukenjuku

| | | | | |
|---|---|---|---|---|
| English: 7th Grade | | Cassette | $64.38 | |
| 8th Grade | | MZ 700 | 64.38 | |
| 9th Grade | | | 64.38 | |
| (computer tests knowledge of sentence structures) | | | | |
| English Composition | | Cassette | | |
| 7th Grade | 1-1 | PC 6000 | 3 vol.s | NESG23020 |
| | 1-2 | PC 8001 | 24.89 | NESG23021 |
| | 1-3 | FM 8 | each | NESG23022 |
| 8th Grade | 1-1 | | " | NESG23023 |
| | 1-2 | | | NESG23024 |
| | 1-3 | | | NESG23025 |
| 9th Grade | 1-1 | | " | NESG23026 |
| | 1-2 | | | NESG23027 |
| | 1-3 | | | NESG23028 |
| High School English Series for College Entrance Exams | | Cassette PC 6001 | | |
| English Idioms 1 (prepositions & nouns/pronouns) | | | 20.60 | |
| English Idioms 2 (prepositions & nouns) | | | 20.60 | |
| English Composition 1 (sentence structure/composition) | | | 20.60 | |
| English Composition 2 (nouns) | | | 20.60 | |
| (all 15 questions X 6 patterns = total of 90 questions) | | | | |
| High School Math Series (6 volumes) | | Cassette PC 6001 PC 6001MK | 29.19 per volume | |
| 4th Grade Math Series (12 volumes) | | PC 6001 | 154.51 | |
| 5th Grade Math Series (12 volumes) | | Cassette PC 6001 PC 6001 MKII | 154.51 | |
| 6th Grade Math Series (6 volumes) | | " | 77.25 | |
| 7th Grade Math Series (6 volumes) | | " | 12.88 per volume | |
| 8th Grade Math Series (4 volumes) | | PC 6001 Extension RAM 32KB | 12.88 per volume | |

| | | | |
|---|---|---|---|
| 9th Grade Math Series (3 volumes) | " | $12.88 per volume | |

Stratford C.C.C.**

| | | | |
|---|---|---|---|
| Required English Composition for: | Cassette PC 6001 | | |
| 7th Grade | MZ 80B | 14.16 | NESU 13004 |
| 8th Grade | MZ 2000 | 14.16 | NESU 13005 |
| 9th Grade | FM 8 | 14.16 | NESU 13006 |
| Required English Grammar for: | " | | |
| 7th Grade | | 14.16 | NESU 11012 |
| 8th Grade | | 14.16 | NESU 11013 |
| 9th Grade | | 14.16 | NESU 11014 |
| Required English Vocabulary (based on the New Prince English Series) for: | " | | |
| 7th Grade | | 12.88 | NESU 11003 |
| 8th Grade | | 12.88 | NESU 11004 |
| 9th Grade | | 12.88 | NESU 11005 |
| Required English Vocabulary (based on the New Horizon English Series) for: | " | | |
| 7th Grade | | 12.88 | NESU 11006 |
| 8th Grade | | 12.88 | NESU 11007 |
| 9th Grade | | 12.88 | NESU 11008 |
| Required English Vocabulary (based on the Crown English Series) for: | Cassette PC 6001 MZ 80B | | |
| 7th Grade | | 12.88 | NESU 11009 |
| 8th Grade | | 12.88 | NESU 11010 |
| 9th Grade | | 12.88 | NESU 11011 |
| Required English Vocabulary (for all texts) for: | " | | |
| 7th Grade | | 12.88 | NESU 11024 |
| 8th Grade | | 12.88 | NESU 11025 |
| 9th Grade | | 12.88 | NESU 11026 |
| (vocabulary is tested either by alphabetical order or by lessons) | | | |

Data Pop

| | | | |
|---|---|---|---|
| My Vocabulary Lesson (English vocabulary) for | Cassette PC 6001 | | |
| 7th Grade | PC 8001 | $14.59 | NEDD13014 |
| 8th Grade | MZ 80B | 16.31 | NEDD13015 |
| 9th Grade | FM 8 | 16.31 | NEDD13016 |
| College Entrance Exams | | 16.31 | NEDD13017 |
| (180 to 300 required vocabulary words; 20 to 30 short sentences and idioms, accents, and irregular verbs) | | | |
| Master Series | Cassette | | |
| Junior High Math | PC 6001 | 11.59 | |
| (13 volumes) | PC 8801 | per volume | |

Kujuku Denki

| | | | |
|---|---|---|---|
| English Vocabulary Notebook | Cassette FM 8 | 12.88 | |

Toshiba

| | | | |
|---|---|---|---|
| Pasopia English Vocabulary Exercise | Cassette Pasopia OA OA - Basic Pasopia 5 T - Basic | 20.60 | |
| Pasopia Music Exercise | " | 20.60 | |
| Pasopia Japanese Exercise | " | 20.60 | |
| Pasopia Math Exercise | " | 20.60 | |

West Japan Micro-Computer Center

| | | | |
|---|---|---|---|
| English Vocabulary Test | Cassette MZ 80B MZ 2000 MZ 1200 | 17.17 | |
| English Vocabulary for High School Entrance Exams | Cassette RAM 32KB | 12.88 | NENK 11006 |
| English Idioms for High School Entrance Exams | | | NENK 11005 |

Japan Micro-Computer Center (Yamagata)

| | | | |
|---|---|---|---|
| Students' Records Management (50 students per class; can manage 9 classes; outputs students' grades, ranking them in order of students' average grades) | OA Basic | $206.01 | |

Hudson

| | | | |
|---|---|---|---|
| Lessons on English Vocabulary for: | Standard Basic | | |
| 7th Grade | PC 6001 | 12.02 | NEHI 13033 |
| 8th Grade | | 12.02 | NEHI 13034 |
| 9th Grade | | 12.02 | NEHI 13035 |
| Beginners | | 12.02 | NEHI 13036 |
| Lessons in English Conversation (Answer questions posed by the computer by pushing the keyboard) | Cassette PC 8001 MZ 80B MZ 80KC MZ 1200 FM 8 Pasopia 5 HC 20 | 12.02 | NEHI 11009 |
| Students' Records Management (Calculates students' scores) | Cassette X-1 | 13.73 | SIHI 16013 |
| Students' Records Management | Cassette PC-1500 | 10.30 | SIHI 11007 |

Hitachi High Soft

| | | | |
|---|---|---|---|
| English Vocabulary Game | Basic Master Junior | 10.73 | |

Micro Cabin

| | | | |
|---|---|---|---|
| Test Management (Can manage 50 students X 11 classes X 19 subjects) | Cassette MZ 80B | 77.25 | SHMR 14011 |
| Students' Records Management (Capacity: 10 classes X 10 pages X 20 subjects X 60 students; scores up to 200 points) | ROM 5" floppy diskette | 163.09 | NEMR 11006 |
| (50 students X 12 subjects X 19 classes) | Cassette MZ 80B | 103.00 | SHMR 14008 |

World System

| | | | |
|---|---|---|---|
| Lessons on English Idioms for: | Cassette PC 6001 | | |
| High School Entrance Exams | | $20.60 | NEWB11004 |
| College Entrance Exams | | 20.60 | NEWB11005 |

Note: * Prices converted from yen at the rate of $1 = Y233.
**See Appendix E for sample advertisement.

The distribution network for software in Japan is diverse. Large mass-market retail outlets such as supermarkets, discount stores and convenience store chains are entering into the software distribution business, especially for home use software such as games and home-management applications. Chart XXII shows the types of dealers and their percentages of software sales in Japan.

Chart XXII

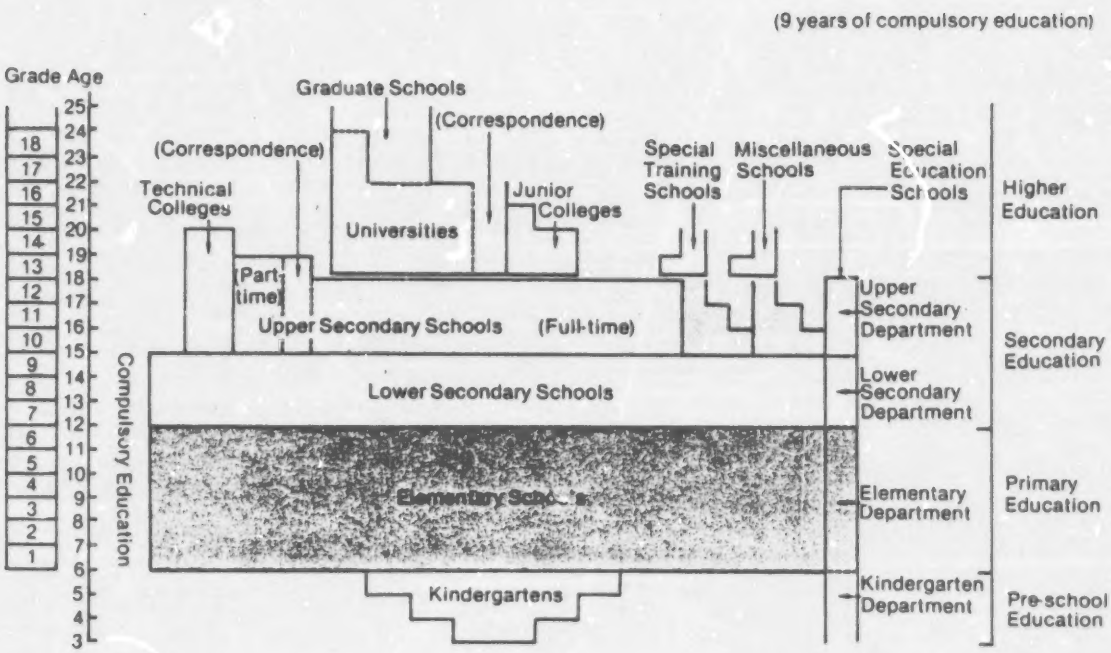
Distribution of Personal Computer Software in Japan

| Type of Dealer | Percent of Software Sales Handled |
|---|---|
| Small Computer Stores, Small Office Supply Stores, Small Electric Appliance Stores, and others | 49.3% |
| Mass Market Appliance Stores | 23.8% |
| Bookstores | 14.7% |
| Large Office Supply Stores | 5.3% |
| Supermarkets | 5.1% |
| Department Stores | 2.6% |

Source: Japan Soft Bank Corporation

# APPENDIX A

## Structure of the Japanese School System




**Source:** "Education in Japan — A Graphic Presentation" by the Education Ministry



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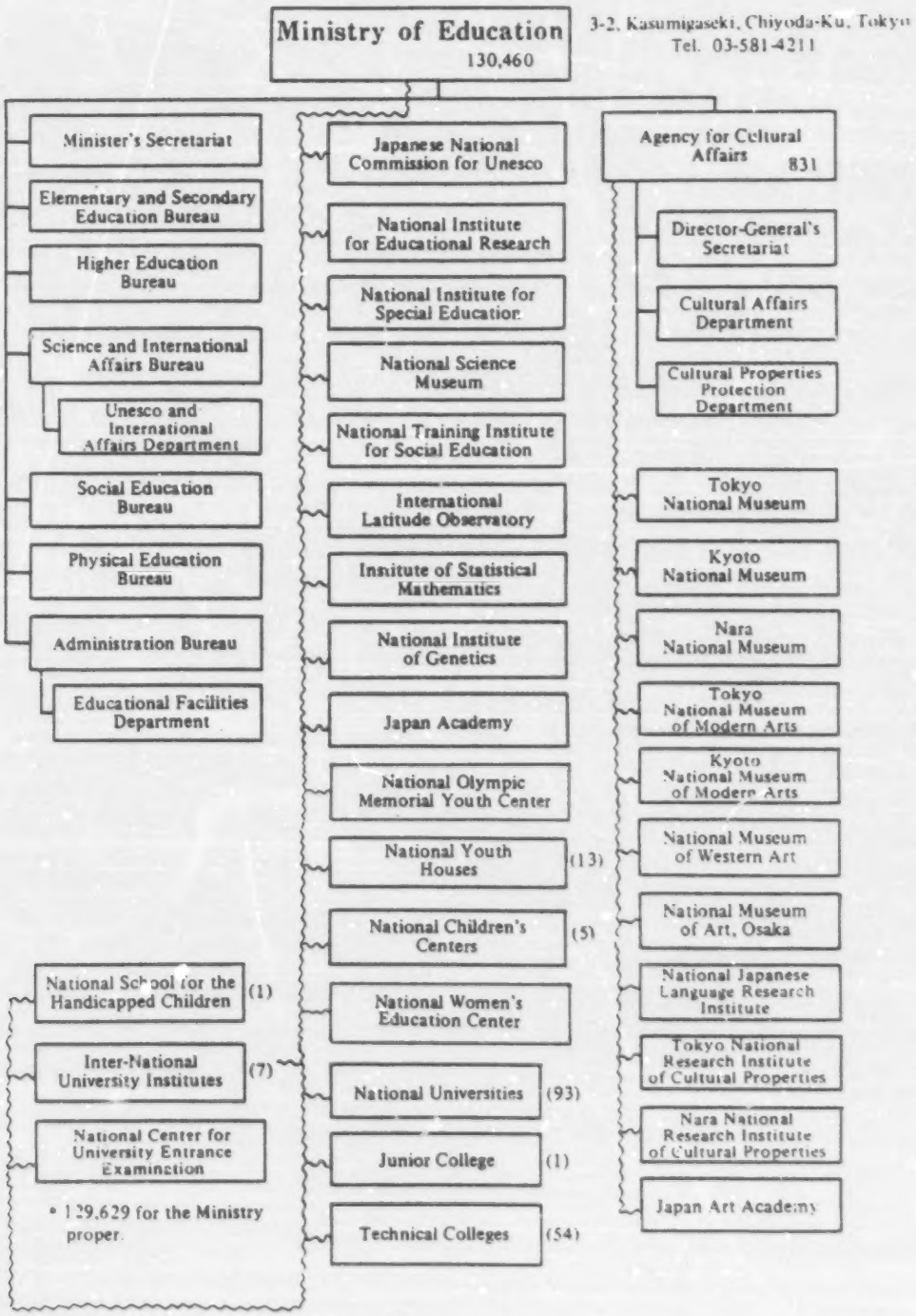
## Organization of the Ministry of Education


Ministry of Education
130,460
3-2, Kasumigaseki, Chiyoda-Ku, Tokyo
Tel. 03-581-4211
Minister's Secretariat
Elementary and Secondary Education Bureau
Higher Education Bureau
Science and International Affairs Bureau
Unesco and International Affairs Department
Social Education Bureau
Physical Education Bureau
Administration Bureau
Educational Facilities Department
Japanese National Commission for Unesco
National Institute for Educational Research
National Institute for Special Education
National Science Museum
National Training Institute for Social Education
International Latitude Observatory
Innsitute of Statistical Mathematics
National Institute of Genetics
Japan Academy
National Olympic Memorial Youth Center
National Youth Houses (13)
National Children's Centers (5)
National Women's Education Center
National Universities (93)
Junior College (1)
Technical Colleges (54)
Agency for Cultural Affairs 831
Director-General's Secretariat
Cultural Affairs Department
Cultural Properties Protection Department
Tokyo National Museum
Kyoto National Museum
Nara National Museum
Tokyo National Museum of Modern Arts
Kyoto National Museum of Modern Arts
National Museum of Western Art
National Museum of Art, Osaka
National Japanese Language Research Institute
Tokyo National Research Institute of Cultural Properties
Nara National Research Institute of Cultural Properties
Japan Art Academy
National School for the Handicapped Children (1)
Inter-National University Institutes (7)
National Center for University Entrance Examination
* 129,629 for the Ministry proper.

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From: Organization of the Government of Japan, The Administrative Management Bureau of the Administrative Management Agency of the Prime Minister's Office. September, 1980.

English Curriculum Guidelines for Lower Secondary School

# COURSE OF STUDY FOR LOWER SECONDARY SCHOOLS IN JAPAN

(Notification No. 156 of Ministry of Education, Science and Culture)

EDUCATIONAL AND CULTURAL EXCHANGE DIVISION
UNESCO AND INTERNATIONAL AFFAIRS DEPARTMENT
SCIENCE AND INTERNATIONAL AFFAIRS BUREAU
MINISTRY OF EDUCATION, SCIENCE AND CULTURE
GOVERNMENT OF JAPAN
1983

# PREFACE

The present Course of Study for Lower Secondary Schools was officially announced on 23 July, 1977 (Notification No.156 of the Ministry of Education, Science and Culture) and was put into effect on 1 April, 1981.

It is hoped that the English version of the Course of Study for Lower Secondary Schools will serve to introduce abroad the contents of lower secondary education in Japan. The translation has been prepared by the National Institute for Educational Research.

Educational and Cultural Exchange Division
Unesco and International Affairs Department
Science and International Affairs Bureau
Ministry of Education, Science and Culture

February, 1983

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## Section 9 Foreign Languages

### I. OVERALL OBJECTIVES

To develop students' basic ability to understand a foreign language and express themselves in it, to deepen their interest in a language, and to help them acquire the basic understanding of the daily life and way of thinking of foreign people.

### II. OBJECTIVES AND CONTENTS FOR EACH GRADE

[redacted]

**First Grade** (equivalent to 7th grade in the U.S.; 12-13 years old)

1. Objectives

(1) To enable students to hear and speak on simple matters using primary English.

(2) To enable students to read primary English sentences on simple matters.

(3) To enable students to write about simple matters using primary English.

2. Contents

1) Language activities.

Following language activities should be conducted in order to develop students' ability of understanding English and expressing themselves in English:

a. Hearing and speaking.

The following items are to be taught:

a) To grasp the main points in topics and to understand the necessary contents.

b) To speak without missing important things, by arranging what one intends to express.

c) To reply accurately after catching the intention of the speaker.

b. Reading.



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The following items are to be taught:

a) To read aloud correctly with clear pronunciation.

b) To read aloud or silently considering the content of the sentence.

c) To read aloud so that the meaning of what is written may be expressed adequately, after understanding the content of the sentence.

d) To grasp the meaning of what is written as a whole.

c. Writing.

The following items are to be taught:

a) To write down the sentence accurately after listening to it.

b) To write without missing major points by arranging what one intends is to express.

c) To catch the content of what is written and to write about it.

2) Language materials.

The language activities mentioned in 1) above are to be conducted, as a rule, by using following language materials:

a. Pronunciation.

a) Current standard sounds.

b) Basic intonations.

c) Basic punctuation.

d) Basic sentence stress.

e) Accent.

b. Sentences.

a) Simple sentences.

b) Indicative affirmative and negative sentences.

c) Interrogative sentences which begin with a verb, with auxiliary verbs of 'Can', 'Do' and 'Does', or which include 'or', and begin with 'How', 'What', 'When', 'Where', 'Which', 'Who' and 'Whose'.

d) Imperative sentences which begin with verbs other than 'Be'.

c. Sentence patterns.

a) 'Subject' + 'Verb' pattern.

b) 'Subject' + 'Verb' + 'Complement' pattern in which the verb is 'be' and the complement is noun or pronoun or adjective.

c) 'Subject' + 'Verb' + 'Object' pattern in which the object is noun or pronoun.

d) Patterns which begin with 'There is' or 'There are'.

d. Words and idioms.

a) 300 to 350 words including those selected from the Attached List 1.

b) Basic idioms.

e. Grammatical items.

a) Mainly common nouns and proper nouns .

b) Personal, demonstrative, interrogative and numeral pronouns.

c) Present and present progressive forms.

f. Letters.

Capital and small letters of alphabets in printed and scriptive forms.

3. Points for Special Consideration in Teaching

As for a) under 2)-d. of the Contents, nouns with irregular plural forms and compound nouns, inflected forms of pronouns

by gender, number and case are respectively counted as one word. (Same for Grades 2 and 3.)

Second Grade (equivalent to 8th grade in the U.S.; 13-14 years old)

1. Objectives

(1) To enable students to hear and speak, using primary English, grasping the outline of the matters.

(2) To enable students to read primary English sentences, grasping the outline of matters written.

(3) To enable students to write sentences in primary English so that the outline of the matters can be communicated.

2. Contents

1) Language activities.

To conduct the language activities indicated in Grade 1 on the basis of the objectives for Grade 2.

2) Language materials.

The language activities of 1) above are to be conducted as a rule using the following language materials in addition to the language materials indicated for Grade 1.

a. Sentences.

a) Compound and complex sentences.

b) Interrogative sentences that begin with such auxiliary verbs as 'May', etc. and 'Why'.

c) Imperative sentences that begin with the verb 'Be'.

d) Basic exclamatory sentences.

b. Sentence patterns.

a) 'Subject' + 'Verb' + 'Complement' pattern in which the verb is other than 'be' and the complement is noun or pronoun.

b) 'Subject' + 'Verb' + 'Object' pattern in which the object is gerund or infinitive.

c) 'Subject' + 'Verb' + 'Indirect object' + 'Direct object' pattern in which the direct object is noun

or pronoun.

c. Words and idioms.

a) 300 to 350 new words including those selected from the Attached List 1.

b) Basic idioms.

d. Grammatical items.

a) Nouns other than common and proper nouns.

b) Comparative forms of adjective and adverb.

c) Forms of past, future and past progressive.

d) Present and past forms of the passive.

e) Infinitives which function as noun and adjective, and adverbial infinitives which means 'purpose'.

f) Gerund which functions as object of verb.

3) Points for Special Consideration in Teaching

As for a) under 2)-c. of the Contents above, irregularly inflected adjectives and adverbs, and irregularly inflected forms of past and past participle of verbs are counted as one separate word. (Same for Grade 3.)

Third Grade (equivalent to 9th grade in the U.S.; 14-15 years old)

1. Objectives

(1) To enable students to hear and speak, using primary English, grasping the main points of the matters.

(2) To enable students to read primary English sentences, grasping the main points of the matters written.

(3) To enable students to write sentences in primary English so that the main points of the matters can be communicated.

2. Contents

1) Language activities.

To conduct the language activities indicated for Grade 1



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on the basis of the objectives for Grade 3.

2) Language materials.

The language activities of 1) above are to be conducted as a rule using the following language materials in addition to the language materials indicated for Grades 1 and 2.

a. Sentence patterns.

a) 'Subject' + 'Verb' + 'Object' pattern in which the object begins with 'how, etc.' + 'to infinitive' or a 'what, etc.' clause or a 'that' clause or the clause without 'that'.

b) 'Subject' + 'Verb' + 'Object' + 'Complement' pattern in which the complement is noun.

c) 'It' + 'be-verb' + '---'( + for ---) + 'to infinitive' pattern.

d) 'Subject' + 'Verb such as tell, ask, etc.' + 'Object' + 'Infinitive' pattern.

b. Words and idioms.

a) 300 to 350 new words including those selected from the Attached List 1.

b) Basic idioms.

c. Grammatical items.

a) Restrictive use of relative pronouns of 'which', 'who' and 'that' (including the cases in which these are omitted).

b) Present perfect tense.

c) Adjectival use of present and past participles.

d) Basic use of gerund other than the use of verb as object.

3) Points for Special Consideration in Teaching

In relation to the relative pronouns indicated in a) under 2)-c. of the Contents above, the pattern of 'Preposi-



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tion' + 'Relative Pronoun' should not be taught.

[Attached List 1]

The following words should be taught in any of Grades 1, 2 and 3 unless shown in 2. Contents of each grade.

| | | | |
|---|---|---|---|
| a | about | across | after |
| afternoon | again | ago | all |
| along | already | also | always |
| am | among | an | and |
| animal | another | answer | any |
| anyone | anything | April | are |
| arrive | as | ask | at |
| August | aunt | away | |
| back | bad | be | because |
| become | before | begin | between |
| big | bird | black | blue |
| boat | book | both | box |
| boy | bread | break | breakfast |
| bring | brother | build | building |
| bus | busy | but | buy |
| by | | | |
| call | can | car | carry |
| catch | chair | child | city |
| class | classroom | clean | close |
| cloud | club | cold | colo(u)r |
| come | cook | cool | country |
| cry | cup | cut | |
| dark | daughter | day | dear |
| December | desk | dictionary | dinner |
| do | does | door | down |
| draw | drink | drive | during |
| each | ear | early | easy |
| eat | eight | eighteen | eighth |
| eighty | either | eleven | eleventh |
| English | enough | evening | ever |
| every | everyone | everything | eye |
| face | fall | family | far |
| farm | fast | father | February |
| few | fifteen | fifth | fifty |
| find | fine | finish | first |
| fish | five | flower | fly |
| food | foot | for | forget |
| forty | four | fourteen | fourth |
| Friday | friend | from | fruit |
| game | garden | get | girl |
| give | glad | glass | go |
| good | goodby(e) | great | green |
| ground | grow | | |
| hair | half | hand | happy |



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| | | | |
|---|---|---|---|
| hard | has | have | he |
| head | hear | help | her |
| here | hers | high | hill |
| him | his | holiday | home |
| hope | hot | hour | house |
| how | hundred | | |
| I | if | in | interesting |
| into | invite | is | it |
| its | | | |
| January | Japan | Japanese | July |
| June | just | | |
| keep | kind | kitchen | know |
| lake | large | last | late |
| learn | leave | left | lend |
| let | letter | library | light |
| like | listen | little | live |
| long | look | lose | love |
| lunch | | | |
| make | man | many | March |
| May | may | me | meet |
| milk | mine | minute | Miss |
| Monday | money | month | moon |
| more | morning | most | mother |
| mountain | mouth | Mr. | Mrs. |
| much | music | must | my |
| name | near | need | never |
| new | newspaper | next | nice |
| night | nine | nineteen | ninety |
| ninth | no | noon | nose |
| not | notebook | November | now |
| o'clock | October | of | off |
| often | old | on | once |
| one | only | open | or |
| other | our | ours | out |
| over | | | |
| page | paper | park | past |
| pen | pencil | people | picture |
| plane | play | please | poor |
| pretty | put | | |
| question | quickly | | |
| rain | read | ready | red |
| rich | ride | right | rise |
| river | room | run | |
| same | Saturday | say | school |
| sea | season | second | see |
| sell | send | September | seven |
| seventeen | seventh | seventy | shall |
| she | shop | short | should |
| shout | show | sick | since |
| sing | sister | sit | six |



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| | | | |
|---|---|---|---|
| sixteen | sixth | sixty | sky |
| sleep | slowly | small | smile |
| snow | so | some | someone |
| something | sometimes | son | soon |
| sorry | speak | spend | sport |
| spring | stand | star | start |
| station | stay | still | stop |
| store | story | street | strong |
| student | study | such | summer |
| sun | Sunday | swim | |
| table | take | talk | tall |
| teach | teacher | tell | ten |
| tenth | than | thank | that |
| the | their | theirs | them |
| then | there | these | they |
| think | third | thirteen | thirty |
| this | those | thousand | three |
| through | throw | Thursday | time |
| to | today | together | tomorrow |
| too | town | tree | try |
| Tuesday | turn | twelfth | twelve |
| twenty | two | | |
| uncle | under | understand | until(or till) |
| up | us | use | |
| very | village | visit | |
| wait | walk | wall | want |
| warm | wash | watch | water |
| way | we | Wednesday | week |
| well | what | when | where |
| which | white | who | whom |
| whose | why | will | wind |
| window | winter | with | without |
| woman | word | work | world |
| would | write | | |
| yard | year | yellow | yes |
| yesterday | yet | you | young |
| your | yours | | |

German

First Grade

1. Objectives

Objectives of English for Grade 1 are applied correspondingly.

2. Contents

1) Language activities.





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# APPENDIX D

## English Curriculum Guidelines for Upper Secondary Schools in Japan

From: Gakushu Shido Yoryo no Tenkai
Published by Meiji Tosho, 1982

### English I (10th Grade)

Objective: To develop the basic ability to understand, write and read English

Listening Comprehension/Speaking

(1) To be able to understand the important points of the text
(2) To be able to understand what the other person is saying, and to respond accurately

Writing

(1) To learn to write dictation
(2) To learn to write accurately
(3) To understand the content of the text and to be able to write comments

Sentence Structure

(1) Subject + Verb (other than the verb To Be) + Complement (Present Participle)
(2) Subject + Verb + Indirect Object + Direct Object (What + Infinitive; If/Whether/What/That)
(3) Subject + Verb + Object (If/Whether)
(4) Subject + Verb + Object + Complement (Adjective/Present Participle)
(5) It + be

Reading

(1) To read with accurate pronunciation
(2) To read aloud or silently with comprehension
(3) To understand the content of the text

Vocabulary

(1) To learn 400 to 500 new vocabulary words

Grammar

(1) Relative pronoun What
(2) Adverbs/Relative Adverbs (When, Where)
(3) Past perfect tense; present perfect tense in the progressive form
(4) Future tense in the passive voice

English II (11th and 12th grades)

Objective: Same as English I

Sentence Structure

(1) Subject + Verb (To Be) + Complement (What/That)
(2) Subject + Verb (other than the verb To Be) + Complement (Past Participle)
(3) Subject + Verb + Object + Complement (Past Particle)
(4) Subject + seem + Infinitive (It + seem + that)

Vocabulary

(1) To learn 600 to 700 new vocabulary words

Grammar

(1) Future tense in the progressive form
(2) Past perfect tense in the progressive form
(3) Future perfect tense
(4) Participle construction
(5) Subjunctive mood

Electives (11th and 12th grades)

English IIA (Listening Comprehension/Speaking)
English IIB (Reading)
English IIC (Writing)

Objectives:

English A

To further develop the basic ability to listen and speak English
(1) To understand the point of the conversation
(2) To be able to organize the conversation effectively
(3) To be able to respond/speak accurately

English B

To further develop the basic ability to read. To bring out a positive attitude toward understanding English.
(1) To read with accurate pronunciation
(2) To read aloud/silently with comprehension
(3) To understand the outline of the text

English C

To further develop the basic ability to write English. To bring out a positive attitude towards expressing oneself in English.
(1) To be able to write dictation
(2) To write without leaving out the essential points
(3) To be able to understand the text and write comments

# ストラットフォードのパソコン家庭教師

# STRATFORD C.A.I.

## 大好評発売中！

MSX

| | MON | TUE | WED | THU | FRI |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

●コンピューターは、人間がいくら間違えても、決して感情的になることはありません。生徒の学力に応じて、わかるまで何度でも丁寧に教えてくれる　それがパソコン家庭教師の特質です。

●家庭教師センター学習館が監修にあたり実際の教育現場で開発された実用的な教育用ソフトウェアです。

●文部省の学習指導要領に準拠していますので、どの教科書にも適応し（幼児のえいごを除く）学習を側面から的確に補足します。

定価　各三千八百円（三十二K以上使用）
（カセット＋説明書）
ブック型パッケージ入

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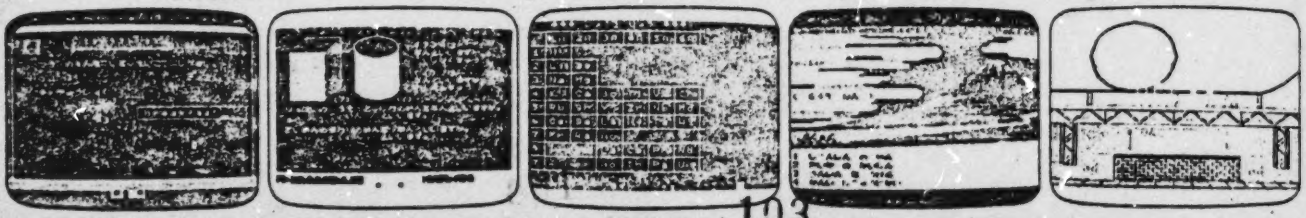
ストラットフォード教育用ソフトは25種、360作品。詳しくは、総合カタログを御覧下さい。

●第2弾10作品開発中！――当社MSX開発予定作品は、幼児から大学受験までの70作品。

**第1弾・9作品**

【中学必修英単語】　【楽しい算数】
中1・中2・中3の3学年　小4・小5・小6の各下巻
計3作品　　計3作品

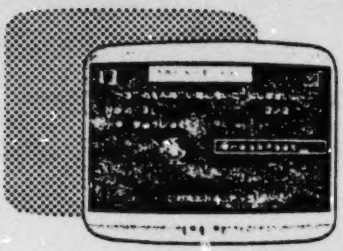
【化学〔元素記号マスター〕】　【日本史年表】　【幼児のえいご】





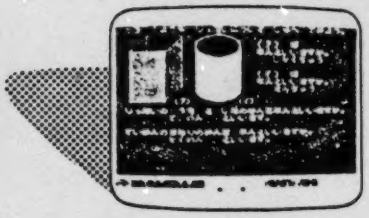
ストラットフォード・コンピューターセンター株式会社　〒336 埼玉県浦和市南浦和2－36－15　☎0488(85)5222(大代表)

## 【プログラムの内容と概要】



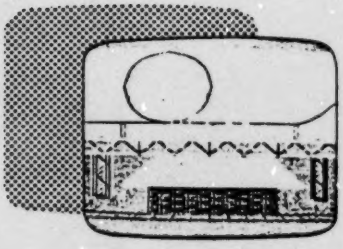
【中学必修英単語】中学1年・2年・3年の計3作品

●グラフィックスとサウンド機能を使って、英語嫌いな生徒でも楽しく学べるように配慮されています。●メイン・プログラムは、「検索」と「テスト」から構成。●「検索」は、うろ覚えの単語を検索する場合に有効です。何とたった1文字を入力しただけで、目的の単語を捜し出します！　コンピューター・パワーを満喫してください。●「テスト」は英語と日本語のどちらでも受験できます。皆さんの答えをパソコン家庭教師が徹底チェック。1文字のスペル・ミスも見のがさず、間違いを指摘します。●テストが済むと、自動的に採点が行われます。勿論プリンターへの出力も可能です！



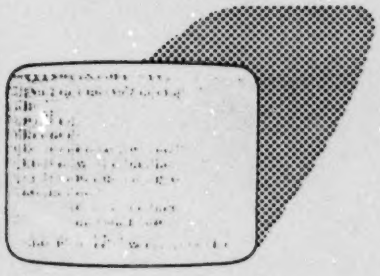
【楽しい算数】小学4年・5年・6年の各下巻、計3作品

●グラフィックスとサウンド機能を使って、算数嫌いな生徒でも楽しく学べるように配慮しました。●メイン・プログラムは、「学習」と「テスト」から構成されています。●「学習」は、楽しいグラフィックス画面の連続です。本の中では決して動くことのなかった数字や図が、音とともに躍動して、生徒の興味と理解を促します。ここでは、基礎的なことがらをマスターしていただきます。●「学習」で自信がついたら「テスト」に挑戦！　パソコン家庭教師が正誤を判定し、採点と間違いの指摘をします。



【幼児のえいご】対象：3才から6才までの幼児

●アルファベットを既に理解した子供たちが対象です。●グラフィックスとサウンド機能を活用して、幼児の学習を側面から的確に補足し、楽しく学べるように配慮しました。●メイン・プログラムは、「勉強」と「テスト」から構成されています。●「勉強」はグラフィックス画面の連続です。本の中では動くことのなかった英単語が、楽しい遊園地を舞台に、音楽とともに躍動して子供たちの興味と理解を促します。「勉強」で知識が構築されたら、「テスト」に挑戦！●「テスト」では、ウサギと亀さんが子供たちのお相手をつとめます。幼稚園の先生がスタッフに加わって開発されました。



【化学〔元素記号マスター〕】対象：中学生から高校生

●周期表をプログラム。化学嫌いな生徒でも楽しく学べるように配慮しました。●メイン・プログラムは「検索」「テスト」「一覧」から構成されています。●「検索」は、元素名・記号・番号の3種類の方法で検索条件の設定が可能です。化学辞典としての機能も合わせ持ちます。●「検索」で自信がついたら、「テスト」に挑戦！　答の入力と同時に、コンピューターが自動的に採点と間違いを指摘します！●パソコン家庭教師を相手に、あの面倒な周期表を無理なくマスター！　中学生から高校生までが対象です。

【日本史年表】対象：中学生

●メイン・プログラムは「検索」と「テスト」から構成されています。●「検索」は、うろ覚えの年表を検索する場合に有効です。何とたった1文字を入力しただけでも、歴史上の「できごと」を検索！●「検索」で自信がついたら「テスト」に挑戦！　採点は勿論のこと、間違った箇所をパソコン家庭教師が一覧表にまとめて表示してくれます！●テスト結果をプリンターに出力し、成績の記録や保存も可能です！●テスト画面の背景は、夕焼に輝く富士の山！　富士が見おろす日本の国で、一体何が起こったのか？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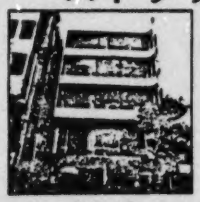
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ソフト開発部

シンボルマーク

編　集　部

教材開発部

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